Ethical and Professional Standards

Reading 1: Code of Ethics and Standards of Professional Conduct

Unless otherwise stated in the question, all individuals in the following questions are CFA Institute members or candidates in the CFA Program and, therefore, are subject to the CFA Institute Code of Ethics and Standards of Professional Conduct.

1. Oversight and responsibility for the CFA Institute Professional Conduct Program is maintained by the:

   A. Board of Governors

   B. CEO

   C. Disciplinary Review Committee

2. If a member or candidate does not accept the charges and proposed sanction levied by CFA Institute under the Professional Conduct Program, the matter is referred to a panel composed of

   A. Board of Governors

   B. Senior CFA Institute executives

   C. Disciplinary Review Committee

3. Sanctions that can be imposed by CFA institute under the Professional Conduct Program include all of the following except:

   A. Public Censure

   B. Fine

   C. Suspension of membership

4. Bob Hadrell, CFA, has recently joined a new firm that currently reviewing its internal code of ethics. As part of this review, the firm has asked Hadrell for a summary of the CFA Institute Code of Ethics and Standards of Professional Conduct. Hadrell makes the following two statements:

   Statement 1:"Members of CFA Institute and candidates for the CFA designation must promote the integrity of and uphold the rules governing capital markets”

Statement 2:” Integrity of Capital Markets: Market Manipulation.”

Hadrell should describe:

A. Both Statement 1 and Statement 2 as Standards of Professional Conduct

B. Statement 1 as a component of the Code of Ethics and Statement 2 as a Standard of Professional Conduct

C. Statement 1 as a Standard of Professional Conduct and Statement 2 as a component of the Code of Ethics

5. “Priority of Transactions” is included as a sub-section to which CFA Institute Standard of Professional Conduct?

A. Duties to clients

B. Investment analysis, recommendations and actions

C. Conflicts of interest

Reading 1: Code of Ethics and Standards of Professional Conduct

1. Oversight and responsibility for the CFA Institute Professional Conduct Program is maintained by the:

   A. Board of Governors

   B. CEO

   C. Disciplinary Review Committee

   Answer: A

   The CFA Institute Board of Governors maintains oversight and responsibility for the Professional Conduct Program (PCP), which, in conjunction with the Disciplinary Review Committee (DRC), is responsible for enforcement of the Code and Standards.

2. If a member or candidate does not accept the charges and proposed sanction levied by the CFA Institute under the Professional Conduct Program, the matter is referred to a panel composed of

   A. Board of Governors

   B. Senior CFA Institute executives

   C. Disciplinary Review Committee

   Answer: C

   If the member or candidate does not accept the charges and proposed sanction levied by the CFA Institute under the Professional Conduct Program, the matter is referred to a panel composed of DRC members. Panels review materials and presentations from Professional Conduct staff and from the member or candidate. The panel's task is to determine whether a violation of the Code and Standards or testing policies occurred and, if so, what sanction should be imposed.

3. Sanctions that can be imposed by the CFA institute under the Professional Conduct Program include all of the following except:

   A. Public Censure

B. Fine

C. Suspension of membership

Answer: B

Sanctions imposed by CFA Institute may have significant consequences; they include public censure, suspension of membership and use of the CFA designation, and revocation of the CFA charter. Candidates enrolled in the CFA Program who have violated the Code and Standards or testing policies may be suspended or prohibited from further participation in the CFA Program.

4. Bob Hadrell, CFA, has recently joined a new firm that currently reviewing its internal code of ethics. As part of this review, the firm has asked Hadrell for a summary of the CFA Institute Code of Ethics and Standards of Professional Conduct. Hadrell makes the following two statements:

   Statement 1:"Members of CFA Institute and candidates for the CFA designation must promote the integrity of and uphold the rules governing capital markets"

   Statement 2:" Integrity of Capital Markets: Market Manipulation."

   Hadrell should describe:

   A. Both Statement 1 and Statement 2 as Standards of Professional Conduct

   B. Statement 1 as a component of the Code of Ethics and Statement 2 as a Standard of Professional Conduct

   C. Statement 1 as a Standard of Professional Conduct and Statement 2 as a component of the Code of Ethics

   Answer: B

   The Code of Ethics contains six components that address general areas of Ethical behaviour. The Standards of Professional Conduct are seven areas of Professional Conduct that deal with specific types of behaviour in certain situations, e.g. Market Manipulation.

5. "Priority of Transactions" is included as a sub-section to which CFA Institute Standard of Professional Conduct?

A. Duties to clients

B. Investment analysis, recommendations and actions

C. Conflicts of interest

Answer: C

Standard VI(B)Conflicts of Interest relates to Priority of Transactions.

Reading 2: Guidance for Standards I-VII

1. Tom Gerten is a research analyst that has reasons to believe that ongoing employer activities are in violation of CFA Institute Standards of Professional Conduct. Gerten's initial response should be to:

   A. Report his suspicions to the relevant regulatory body

   B. Report his suspicions to his supervisor or compliance department

   C. Resign his position at the firm in order to dissociate from the activity

2. Charles Baker uses internet social media platforms to communicate with clients. He resides in a country with no securities laws or regulations that address social media, and his clients are located in a country with less strict securities laws and regulations regarding use of social media than the Code and Standards. Baker should adhere to:

   A. the Code and Standards

   B. the securities laws and regulations of the location of his client

   C. the securities laws and regulations of his residence

3. Frank Clotti is an investment analyst working for a credit rating agency. Clotti has been told by his immediate supervisor that ratings for structured products issued by a certain client should not receive a rating that is below investment grade, as it might affect the advisory relationship that the credit rating agency has with the client. Clotti has already conducted his analysis and concluded that several of the structured products issued by the client should be rated as below investment grade. According to the Standards, Clotti should:

   A. Adhere to the instructions of his supervisor

   B. Assign the structured products the lowest possible investment grade

   C. Refuse to associate with research that assigns a rating of investment grade to the structured products he has concluded should be rated below investment grade

4. Which of the following policies most closely adheres to the recommended procedures for compliance under Standard I(B):Independence and Objectivity regarding gifts?
   A. Analysts should reject all gifts from clients and related parties
   B. Analysts should disclose gifts from clients to their employer and receive only modest gifts from related parties
   C. Analysts should disclose gifts from clients to their employer and reject all gifts from related parties
5. Jim Wonder reads a study in a financial Journal regarding the valuation of global equity markets, and wishes to use information in the study in his own research. In order to avoid violating Standard I(C): Misrepresentation Wonder should attribute the information used in his report to
   A. The financial journal
   B. The original author of the study
   C. Both the financial journal and the original author of the study
6. All of the following are considered acts of plagiarism under Standard I(C): Misrepresentation except:
   A. Verbally repeating a quote of a leading industry expert in an online webcast without attribution
   B. A firm using work completed by analysts that subsequently left the firm without attributing the analysts
   C. An analyst reissuing work solely under their name that was initially completed by analysts that previously worked at the firm
7. Which of the following actions is most likely to be considered a violation of Standard I(D): Misconduct?
   A. A portfolio manager conducting an extra marital relationship with a member of his office
   B. A portfolio manager not expending the necessary effort to due diligence securities that are added to client portfolios
   C. A risk manager filing for personal bankruptcy

8. Which of the following statements clearly conflicts with the recommended procedures for compliance with Standard I(D): Misconduct?

   A. Firms should develop a code of ethics that makes it clear that personal behavior that reflects poorly on the individual, the institution or the industry will not be tolerated

   B. Firms should not attempt to list potential violations and sanctions due to difficult nature of capturing the wide variety of misconduct possible at modern financial institutions

   C. Firms should check the references of individuals to ensure they are of good character and not ineligible to work in the industry due to past misdemeanours

9. Tom Cobo is a research analyst covering the biotechnology sector. He employs an 'expert network' of industry contacts to stay abreast of current issues in the industry. Cobo arranges a call with a scientist involved in the preliminary testing of an Alzheimer's disease, during which the scientist discloses that it is very likely that the tests will be successful and the drug will be fast tracked through the government approval system. Cobo returns to his firm and discusses this information with his colleagues, before increasing his holding in the company. Cobo has

   A. Violated Standard II(A): Material Non-Public Information

   B. Not violated Standard II(A): Material Non-Public Information so long as procedures are in place with the expert network to deter the exchange of material non-public information

   C. Not violated Standard II(A): Material Non-Public Information because the information was being publically disseminated by the scientist in the expert network

10. The mosaic theory states that:

    A. Analysts should never use material non-public information

    B. Analysts can use material non-public information as long as it is combined with material public information to reach any conclusion

    C. Analysts can use nonmaterial non-public information

11. Which of the following is least likely to be an example of transaction-based manipulation under Standard II(B): Market Manipulation?

    A. Issuing misleading positive information or overly optimistic projections of a security's worth only to later sell it at an artificially high level.

    B. Crossing a single share of a security at a price that is significantly different from the last traded price in order to affect a related option expiration price

    C. Securing a controlling, dominant position in a financial instrument to exploit and manipulate the price of a related derivative and/or the underlying asset

12. Oscar Moon is an employee at a credit ratings agency, and has created a computer model for valuation of complex asset backed securitized products. The scenarios that Moon uses as the inputs for the model ignore any negative situations of deteriorating credit conditions, increasing rate and falling asset prices. Due to the higher ratings that this model achieves, his valuation model becomes popular with his firm, who are keen to issue positive ratings for structured products in order to win business. Moon's firm compensates him based on the amount of structured products business the firm wins. Moon has

    A. Violated Standard II(A) Market Manipulation

    B. Not violated Standard II(A) Market Manipulation since the scenarios used in the model accurately represent his views

    C. Not violated Standard II(A) Market Manipulation since the Standard only relates to market transactions and publically disseminated information

13. According to Standard III(A): Loyalty, Prudence and Care, soft dollar agreements:

    A. Violate the duty of loyalty to the client

    B. Do not violate the duty of loyalty to the client as long as the goods and services purchased with soft dollar commissions are used to benefit the client

    C. Never violate the duty of loyalty to the client

14. Three investment managers have the following arrangements for voting proxies:

    Manager A votes on all proxy matters that arises on client portfolios

    Manager B has conducted a cost-benefit analysis and only votes on proxies where the benefits of doing so outweigh the costs

    Manager C has a policy of always voting proxies in line with management in order to ensure smooth running of company policy

    Which of these managers is least likely to be in violation of Standard III(A): Loyalty, Prudence and Care?

    A. Manager A

    B. Manager B

    C. Manager C

15. Which of the following policies on communication of investment recommendations is most likely to be in compliance with Standard III(B) Fair Dealing?

    A. All clients are communicated with on a uniform basis

    B. Information is disseminated in a way such that all clients have a fair opportunity to act on every recommendation

    C. Communications are made with clients in order of size

16. Which of the following statements clearly conflicts with the recommended procedures for compliance with Standard III(B): Fair Dealing when a firm is changing an investment recommendation?

    A. Maintain a list of clients and their holdings

    B. Limit the number of people involved

    C. Lengthen the timeframe between decision and dissemination

17. According to Standard III(C): Suitability, members and candidates that receive a request from a client for a trade that does not properly align with the risk and return objectives outlined in the client's investment policy statement should:

    A. Refuse to accept the order

B. Refrain from making the trade until concerns have been discussed with the client

C. Execute the trade, but discuss concerns with the client as soon as practically possible

18. David Haynes is a portfolio manager who manages a mixture of different funds including growth funds and high income dividend funds. He is very confident that he has identified a significantly undervalued opportunity in a high tech growth investment that currently does not pay a dividend. Haynes is so convinced by the opportunity that he feels all of his funds should benefit from it, and subsequently allocates shares across all of his portfolios. His analysis turns out to be correct and the shares perform very strongly. According to Standard III(C): Suitability, Haynes has:

A. violated the Standard

B. not violated the Standard since his analysis was based on a reasonable basis

C. not violated the Standard since his clients benefited from his actions

19. Which of the following statements best characterises the requirements of Standard III(D): Performance Presentation?

A. Members and Candidates must comply with GIPS standards

B. Members and Candidates should encourage their firms to comply with GIPS standards

C. Members and Candidates should only seek employment at firms that adhere to GIPS standards

20. Steven Burrell produces a performance presentation which does not adhere to GIPs standards and includes some simulated data. Which of the following statements is most accurate in relation to the requirements of Standard III(D): Performance Presentation?

A. Burrell is in violation of the Standards since use of simulated data is not allowed

B. Burrell should produce separate reports for actual data and simulated data

C. Burrell should disclose the use of simulated data in the presentation to the recipients of the information

21. Martin Green provides retirement planning advice to high net worth individuals. One of his clients, Sunhil Baal, is a successful entrepreneur who runs several small businesses locally. Green notices that Baal is currently contributing to his pension plan in manner which is very tax inefficient. He consults a colleague, Paul Rodgers and discusses the sources of income that Baal has and the pension contributions that he makes. Rodgers agrees that Baal could make significant tax savings through changing the way he contributes to his personal pension plan, and agrees to contact Baal regarding his situation. Which of the following statements is most accurate regarding Green's behaviour? Green is:

A. In violation of Standard III(E): Preservation of Confidentiality

B. Not in violation of Standard III(E): Preservation of Confidentiality since his actions have benefitted the client

C. Not in violation of Standard III(E): Preservation of Confidentiality since Rodgers is a colleague of Green

22. Which of the following situations is most likely to lead to a violation of Standard III(E): Preservation of Confidentiality? Disclosure of client information:

A. In cooperation with an investigation by the CFA Institute Professional Conduct Program

B. In attempt to introduce the client to new business contacts

C. Having gained client permission to disclose the information

23. Sonny Etheridge is making plans to leave his current employer after 13 years of service. He plans to set up a new firm which will engage in very similar business activities as his current firm. Etheridge resigns his post, and before he leaves the employment of his current firm, makes arrangements in his own time to register his new company as a legal entity. He plans to compete aggressively with his current firm and is confident that he can have success based on the experience and knowledge he has in the industry. Whilst he will not take any client lists from his current employer, he intends to use public information

about his current clients to contact them once he has established his new firm. Is Etheridge in violation of Standard IV(A): Loyalty?

A. Yes, because he plans to compete with his current employer

B. Yes, because he plans to contact the clients of his current employer

C. No

24. Which of the following statements is most accurate regarding the requirements on a member of candidate under Standard IV(A): Loyalty?

A. A member or candidate can not ever engage in independent competition to their current employer

B. A member or candidate can only engage in independent competition to their current employer if they provide full disclosure to their employer prior to engaging in the activity

C. A member or candidate can only engage in independent competition to their current employer if they gain consent from their employer prior to engaging in the activity

25. Peter Morris is a senior portfolio manager at Robearn Investments. As part of his role he often makes internal presentations at Robearn concerning current market conditions and his view on the various companies in the sector that he covers. Due to his high profile and experience, Morris is approached to make public speeches and presentations on similar matters at industry dinners and conferences in return for financial compensation. According to Standard IV(B) Additional Compensation Arrangements, Morris should:

A. Refuse the offer

B. Disclose to Robearn the potential additional compensation from public speaking prior to engaging in the activity

C. Obtain written consent from all parties involved prior to engaging in any public speaking

26. A client offers their fund manager the use of their private yacht should the manager outperform the S&P500 index by ten percentage points or more. According to Standard IV(B) Additional Compensation Arrangements, the manager should:

A. Refuse the bonus

B. Obtain consent from their employer to receive the bonus before it is received

C. Obtain consent from their employer to enter into the arrangement regardless of whether any bonus is eventually received

27. A violation of the Code and Standards has occurred in a department of a financial firm. Which of the following statements is most likely to be accurate with regards to Standard IV(C): Responsibilities of Supervisors?

A. The supervisor of the department is in violation of the Standards

B. The supervisor of the department may possibly be in violation of the Standards

C. The supervisor of the department is not in violation of the Standards

28. Christiana Tesi is an execution trader at Chuck Mcateer, a small institutional investment advisor that manages several mutual funds and private accounts. Her manager, Michael Bond, has recently been tipped off that Tesi is 'front running' fund orders on her personal account – an activity she has been doing for several years. Which of the following statements is most likely to be accurate?

A. The actions of both Tesi and Bond are in violation of the Standards

B. Tesi in violation of the Standards, Bond is not in violation of the Standards

C. Tesi is not in violation of the Standards, Bond is in violation o the Standards

29. According to Standard V(A): Diligence and Reasonable Basis, provided an analyst makes reasonable and diligent efforts to determine the that the research is sound, they are permitted to use

A. Both secondary and third party research

B. Secondary research but not third party research

C. Third party research but not secondary research

30. Laurindo Brecker has produced a report on the equity market neutral strategy hedge fund sector. As part of his research, he has modeled a simple quantitative contrarian strategy that selects long and short weights of securities based on their recent price performance. Brecker uses daily returns over the last three months for his model, and concludes that equity market neutral hedge funds are a good long term investment prospect. Brecker is:

    A. In violation of Standard V(A): Diligence and Reasonable Basis since he has used simulated performance in his report and not disclosed this fact

    B. In violation of Standard V(A): Diligence and Reasonable Basis since he has not conducted a thorough enough analysis before making his recommendation

    C. Not in violation of Standard V(A)

31. Which of the following statements is most likely to be consistent with Standard V(B): Communication with Clients?

    A. Analysts should not use opinions in research and only report facts

    B. Analysts should be clear to distinguish between fact and opinion in research

    C. Analysts should always have an opinion and not just state facts in research

32. Saxit Asset Management has a proprietary model for valuing securities that is based on a combination of fundamental and macroeconomic factors. The model has always been run based on a statistical technique called principal component analysis. After recent personnel changes at the firm, the head of investment management decides that the model will be no longer be used and that managers will use more subjective techniques to value investments. Clients are not informed of the change in the investment process unless they make a direct enquiry about the subject. The head of investment management is:

    A. In violation of Standard V(B): Communication with Clients

    B. Not in violation of Standard V(B) because the personnel changes justified the change in investment process

C. Not in violation with Standard V(B) because the change is being fully disclosed when clients enquire about the process

33. Henry Mullen is a research analyst who bases his research on a wide variety of sources, including digital media such as text messages, blog posts and Twitter posts. There are no local regulations that address the use of digital media sources in research reports. Which of the following statements best describes the duties imposed on Mullen under Standard V(C): Record Retention?

    A. Mullen is not permitted to use these digital media sources in his research

    B. Mullen is permitted to use these digital sources in his research providing all relevant information is retained

    C. Mullen is permitted to use these digital sources providing he adheres to local regulations

34. Jim Bell is a research analyst that has recently changed employer. His original employer did not consent to Bell taking to his new employer any documentation relating to his previous recommendations. He previously had a “Strong Sell” recommendation on the leading company in his sector and wishes to initiate coverage of the company with the same rating. Bell issues a “Strong Sell” rating at his new firm and basis his recommendation on public sources and memory of information gathered at his previous firm. Bell is:

    A. In violation of Standard V(C): Record Retention

    B. Not in violation of Standard V(C): Record Retention, provided he retains records of the public sources and information gathered at his previous firm

    C. Not in violation of Standard V(C): Record Retention since experience and knowledge gained at previous employers is permitted to be used at his new employer

35. Emily Coryell is a research analyst who has a small holding of shares in CDE Corp, a information technology services company. Coryell is asked to initiate coverage on CDE Corp. In order to comply with Standard VI(A): Conflicts of Interest, Coryell should:

    A. Refuse to write the report

B. Disclose to her employer her personal holding in CDE Corp in writing

C. Disclose her personal holding in CDE Corp both to her employer in writing and in the report

36. Clifford Roach is a portfolio manager for Ginger Investments. Historically Roach has been paid a constant percentage of assets under management for his service, however after a recent change in the compensation structure at Ginger, Roach is being compensated based on quarterly performance. Management at Ginger made this internal decision in order to better incentivise their managers to outperform for their clients. Consequently, Roach increases the risk of the portfolios that he manages. No disclosures of the change n compensation structure have been made to clients of Ginger. Roach has most likely:

    A. Violated both Standard III(C) Suitability and Standard VI(A) Conflicts of Interest

    B. Standard III(C) Suitability only

    C. Standard VI(A) Conflicts of Interest only

37. Which of the following statements is least likely consistent with the recommended procedures for compliance with Standard VI(B) Priority of Transactions?

    A. Investment firms should ban all employees from participation in equity IPOs

    B. Strict Limits should be placed on investment personnel acquiring securities in private placements

    C. Investment personnel involved in the investment decision-making process should establish blackout periods prior to trades for clients

38. Bob Bernard discovers that a junior member of staff has frequently been profiting from advanced knowledge of the firm's recommended "buy" list. He checks to see if the personal dealing of the employee has been recorded but it comes to light that the employee had never signed the personal account dealing agreement of the firm. Which of the following statements is most likely to be correct?

    A. There has been a violation of both Standard IV(C) Responsibilities of Supervisors and Standard VI(B) Priority of Transactions

B. There has been a violation of Standard IV(C) Responsibilities of Supervisors only

C. There has been a violation of Standard VI(B) Priority of Transactions only

39. Which of the following statements is consistent with the recommended procedures for compliance with Standard VI(C) Referral Fees?

A. Firms should completely restrict such fees

B. Firms may completely restrict fees or enforce procedures that require disclosure of agreements prior to any payments taking place

C. Firms may completely restrict fees or enforce procedures that require disclosure of agreements before entering into such arrangements

40. Mike Brown is an investment adviser that has a referral agreement in place with a local mortgage broker. Brown has disclosed to his employer that a referral agreement is in place and that he will receive compensation every time the mortgage broker gains a customer on his referral. Brown is:

A. In compliance with Standard VI(C) Referral Fees

B. In violation of Standard VI(C) Referral Fees since he should also disclose the nature and value of the compensation

C. In violation of Standard VI(C) Referral Fees since he should have obtained consent from his firm before entering into the referral Fee agreement

41. Stella Bubsi and Larry Futura are candidates in the CFA Program. Bubsi has asked Futura about the specific details of questions appearing in the exam. Futura has declined to provide specific details, but does give the broad topical areas that were tested. Which of the following statements is most accurate?

A. Both Bubsi and Futura have violated the Standards

B. Bubsi has violated the Standards but Futura has not

C. Neither Bubsi nor Futura have violated the Standards.

42. Joe Folds has recently completed the CFA Program and has been asked his opinion of the process by Tyler Screde who is considering embarking on the Program. According to the Standards, how should Folds respond?

A. With his opinion

B. With fact only, not opinion

C. He should decline to comment

43. Tim Evans and Ernesto Hodges have both recently been awarded the CFA charter. They update their business cards and resumes as follows:

Tim Evans describes himself as "one of only two qualified CFAs at my firm".

Ernesto Hodges replaces his name on his business card with "Ernesto Hodges, **CFA**". Which of the following statements is most accurate?

A. Both Evans and Hodges are in compliance with the Standards

B. Evans is in compliance with the standards, but Hodges is not

C. Neither Evans nor Hodges are in compliance with the Standards

44. Louise Overhill, CFA, makes the following two statements on her professional networking profile page:

Statement 1: "I passed each of the CFA examination levels in consecutive years"

Statement 2: "Passing the three CFA examination levels in consecutive years puts me among an elite group of analysts from which employers can expect superior performance"

How many of the statements made by Overhill are in compliance with the Standards?

A. Neither

B. Statement 1 is in compliance, but statement 2 is not

C. Statement 2 is in compliance, but statement 1 is not

Reading 2: Guidance for Standards I-VII

1. Tom Gerten is a research analyst who has reasons to believe that ongoing employer activities are in violation of CFA Institute Standards of Professional Conduct. Gerten's initial response should be to:

   A. Report his suspicions to the relevant regulatory body

   B. Report his suspicions to his supervisor or compliance department

   C. Resign his position at the firm in order to dissociate from the activity

   Answer: B

   Standard I(A):Knowledge of the Law recommends that members and candidates take the following intermediate steps to dissociate from ethical violations of others when direct discussions with the person or persons committing the violation are unsuccessful. The first step should be to attempt to stop the behavior by bringing it to the attention of the employer through a supervisor or the firm's compliance department. If this attempt is unsuccessful, then members and candidates have a responsibility to step away and dissociate from the activity. Resignation of their position should be considered as a last resort.

2. Charles Baker uses internet social media platforms to communicate with clients. He resides in a country with no securities laws or regulations that address social media, and his clients are located in a country with less strict securities laws and regulations regarding use of social media than the Code and Standards. Baker should adhere to:

   A. the Code and Standards

   B. the securities laws and regulations of the location of his client

   C. the securities laws and regulations of his residence

   Answer: A

   Members and candidates who practice in multiple jurisdictions may be subject to varied securities laws and regulations. If applicable law is stricter than the requirements of the Code and Standards, members and candidates must adhere to applicable law; otherwise, they must adhere to the Code and Standards.

3. Frank Clotti is an investment analyst working for a credit rating agency. Clotti has been told by his immediate supervisor that ratings for structured products issued by a certain client should not receive a rating that is below investment grade, as it might affect the advisory relationship that the credit rating agency has with the client. Clotti has already conducted his analysis and concluded that several of the structured products issued by the client should be rated as below investment grade. According to the Standards, Clotti should:

   A. Adhere to the instructions of his supervisor

   B. Assign the structured products the lowest possible investment grade

   C. Refuse to associate with research that assigns a rating of investment grade to the structured products he has concluded should be rated below investment grade

   Answer: C

   Clotti would be in violation of Standard I(B):Independence and Objectivity if he is associated with research that assigns a higher credit rating to the structured products than that he has calculated as fair in his research.

4. Which of the following policies most closely adheres to the recommended procedures for compliance under Standard I(B):Independence and Objectivity regarding gifts?

   A. Analysts should reject all gifts from clients and related parties

   B. Analysts should disclose gifts from clients to their employer and receive only modest gifts from related parties

   C. Analysts should disclose gifts from clients to their employer and reject all gifts from related parties

   Answer: B

   Standard I(B):Independence and Objectivity recommends that gifts from clients be disclosed to employers and that gifts from related parties be limited. Standard I(B) does not preclude customary, ordinary business-related entertainment as long as its purpose is not to influence or reward members or candidates. Firms should consider a strict value limit for acceptable gifts that is based on the local or regional customs and should address whether the limit is per gift or an aggregate annual value.

5. Jim Wonder reads a study in a financial Journal regarding the valuation of global equity markets, and wishes to use information in the study in his own research. In order to avoid violating Standard I(C): Misrepresentation Wonder should attribute the information used in his report to

   A. The financial journal

   B. The original author of the study

   C. Both the financial journal and the original author of the study

   Answer: C

   According to Standard I(C): Misrepresentation, best practice would be either to obtain the complete study from its original author and cite only that author or to use the information provided by the financial journal and cite both sources.

6. All of the following are considered acts of plagiarism under Standard I(C): Misrepresentation except:

   A. Verbally repeating a quote of a leading industry expert in an online webcast without attribution

   B. A firm using work completed by analysts that subsequently left the firm without attributing the analysts

   C. An analyst reissuing work solely under their name that was initially completed by analysts that previously worked at the firm

   Answer: B

   Standard I(C): Misrepresentation, applies to verbal statements and those made on internet platforms. Work completed by employees is the property of the firm and the firm retains the right to continue using the work completed after a member or candidate has left the organization. The firm may issue future reports without providing attribution to the prior analysts. A member or candidate cannot, however, reissue a previously released report solely under his or her name.

7. Which of the following actions is most likely to be considered a violation of Standard I(D): Misconduct?

   A. A portfolio manager conducting an extra marital relationship with a member of his office

   B. A portfolio manager not expending the necessary effort to due diligence securities that are added to client portfolios

   C. A risk manager filing for personal bankruptcy

   Answer: B

   Standard I(D) addresses all conduct that reflects poorly on the professional integrity, good reputation, or competence of members and candidates. Any act that involves lying, cheating, stealing, or other dishonest conduct is a violation of this standard if the offense reflects adversely on a member's or candidate's professional activities. Although CFA Institute discourages any sort of unethical behavior by members and candidates, the Code and Standards are primarily aimed at conduct and actions related to a member's or candidate's professional life, hence the extra marital affair is not likely to be considered a violation. A portfolio manager not expending the necessary effort on running a client portfolio is likely to call into question the relationship of trust, hence would qualify as misconduct under the standard. Personal bankruptcy does not necessarily indicate misconduct unless the bankruptcy involved some for of professional fraud or deceit.

8. Which of the following statements clearly conflicts with the recommended procedures for compliance with Standard I(D): Misconduct?

   A. Firms should develop a code of ethics that makes it clear that personal behavior that reflects poorly on the individual, the institution or the industry will not be tolerated

   B. Firms should not attempt to list potential violations and sanctions due to difficult nature of capturing the wide variety of misconduct possible at modern financial institutions

C. Firms should check the references of individuals to ensure they are of good character and not ineligible to work in the industry due to past misdemeanours

Answer: B

Standard I(D) recommends that firms disseminate to all employees a list of potential violations and associated disciplinary sanctions, up to and including dismissal from the firm.

9. Tom Cobo is a research analyst covering the biotechnology sector. He employs an 'expert network' of industry contacts to stay abreast of current issues in the industry. Cobo arranges a call with a scientist involved in the preliminary testing of an Alzheimer's disease, during which the scientist discloses that it is very likely that the tests will be successful and the drug will be fast tracked through the government approval system. Cobo returns to his firm and discusses this information with his colleagues, before increasing his holding in the company. Cobo has

A. Violated Standard II(A): Material Non-Public Information

B. Not violated Standard II(A): Material Non-Public Information so long as procedures are in place with the expert network to deter the exchange of material non-public information

C. Not violated Standard II(A): Material Non-Public Information because the information was being publically disseminated by the scientist in the expert network

Answer: A

Cobo has violated Standard II(A) by passing along material non-public information concerning the ongoing product tests, which the fund used to trade in the securities and options of the related company. Watson cannot simply rely on the agreements signed by individuals who participate in expert networks that state that he has not received information that would prohibit his trading activity. He must make his own determination whether information he received through these arrangements reaches a materiality threshold that would affect his trading abilities.

10. The mosaic theory states that:

    A. Analysts should never use material non-public information

    B. Analysts can use material non-public information as long as it is combined with material public information to reach any conclusion

    C. Analysts can use nonmaterial non-public information

    Answer: C

    The mosaic theory states that an analyst may use material public information and nonmaterial nonpublic information in creating a larger picture than shown by any individual piece of information and the conclusions the analyst reaches become material only after the pieces are assembled.

11. Which of the following is least likely to be an example of transaction-based manipulation under Standard II(B): Market Manipulation?

    A. Issuing misleading positive information or overly optimistic projections of a security's worth only to later sell it at an artificially high level.

    B. Crossing a single share of a security at a price that is significantly different from the last traded price in order to affect a related option expiration price

    C. Securing a controlling, dominant position in a financial instrument to exploit and manipulate the price of a related derivative and/or the underlying asset

    Answer: A

    Answer A is an example of information based market manipulation. Answers B and C are examples of transaction based manipulation

12. Oscar Moon is an employee at a credit ratings agency, and has created a computer model for valuation of complex asset backed securitized products. The scenarios that Moon uses as the inputs for the model ignore any negative situations of deteriorating credit conditions, increasing rate and falling asset prices. Due to the higher ratings that this model achieves, his valuation model becomes popular with his firm, who are keen to issue positive ratings for structured products in order to win business. Moon has

A. Violated Standard II(A) Market Manipulation

B. Not violated Standard II(A) Market Manipulation since the scenarios used in the model accurately represent his views

C. Not violated Standard II(A) Market Manipulation since the Standard only relates to market transactions and publically disseminated information

Answer: A

Standard II(A) Market Manipulation applies to manipulating transactions and information, including manipulating the inputs to a model in order to achieve short-term gain, which is the case with Moon. Answer B is not correct since it is most likely that the positive inputs to the model represent Moon's desire for higher compensation than genuinely reflecting his view.

13. According to Standard III(A): Loyalty, Prudence and Care, soft dollar agreements:

A. Violate the duty of loyalty to the client

B. Do not violate the duty of loyalty to the client as long as the goods and services purchased with soft dollar commissions are used to benefit the client

C. Never violate the duty of loyalty to the client

Answer: B

An investment manager often has discretion over the selection of brokers executing transactions. Conflicts may arise when an investment manager uses client brokerage to purchase research services, a practice commonly called "soft dollars" or "soft commissions." A member or candidate who pays a higher brokerage commission than he or she would normally pay to allow for the purchase of goods or services, without corresponding benefit to the client, violates the duty of loyalty to the client.

14. Three investment managers have the following arrangements for voting proxies:

Manager A votes on all proxy matters that arises on client portfolios

Manager B has conducted a cost-benefit analysis and only votes on proxies where the benefits of doing so outweigh the costs

Manager C has a policy of always voting proxies in line with management in order to ensure smooth running of company policy

Which of these managers is least likely to be in violation of Standard III(A): Loyalty, Prudence and Care?

A. Manager A

B. Manager B

C. Manager C

Answer: B

Part of a member's or candidate's duty of loyalty includes voting proxies in an informed and responsible manner. Proxies have economic value to a client, and members and candidates must ensure that they properly safeguard and maximize this value. An investment manager who fails to vote, casts a vote without considering the impact of the question, or votes blindly with management on non-routine governance issues (e.g., a change in company capitalization) may violate this standard. Voting of proxies is an integral part of the management of investments.

A cost–benefit analysis may show that voting all proxies may not benefit the client, so voting proxies may not be necessary in all instances.

15. Which of the following policies on communication of investment recommendations is most likely to be in compliance with Standard III(B) Fair Dealing?

A. All clients are communicated with on a uniform basis

B. Information is disseminated in a way such that all clients have a fair opportunity to act on every recommendation

C. Communications are made with clients in order of size

Answer: B

Each member or candidate is obligated to ensure that information is disseminated in such a manner that all clients have a fair opportunity to act on every recommendation.

Communicating with all clients on a uniform basis presents practical problems for members and candidates because of differences in timing and methods of communication with various types of customers and clients. Members and candidates should encourage their firms to design an equitable system to prevent selective or discriminatory disclosure and should inform clients about what kind of communications they will receive.

16. Which of the following statements clearly conflicts with the recommended procedures for compliance with Standard III(B): Fair Dealing when a firm is changing an investment recommendation?

    A. Maintain a list of clients and their holdings

    B. Limit the number of people involved

    C. Lengthen the timeframe between decision and dissemination

    Answer: C

    Members and candidates should maintain a list of clients and their holdings to understand which clients are most impacted by changes in recommendations. They should also limit the number of people privy to the knowledge that there is due to be a change in recommendation in order to prevent inequitable disclosure. The Code and Standards recommend that members and candidates shorten the timeframe between decision and dissemination in order to reduce the chance of unfair dissemination to select clients.

17. According to Standard III(C): Suitability, members and candidates that receive a request from a client for a trade that does not properly align with the risk and return objectives outlined in the client's investment policy statement should:

    A. Refuse to accept the order

    B. Refrain from making the trade until concerns have been discussed with the client

    C. Execute the trade, but discuss concerns with the client as soon as practically possible

    Answer: B

In cases of unsolicited trade requests that a member or candidate knows are unsuitable for a client, the member or candidate should refrain from making the trade until he or she discusses the concerns with the client.

18. David Haynes is a portfolio manager who manages a mixture of different funds including growth funds and high income dividend funds. He is very confident that he has identified a significantly undervalued opportunity in a high tech growth investment that currently does not pay a dividend. Haynes is so convinced by the opportunity that he feels all of his funds should benefit from it, and subsequently allocates shares across all of his portfolios. His analysis turns out to be correct and the shares perform very strongly. According to Standard III(C): Suitability, Haynes has:

    A. violated the Standard

    B. not violated the Standard since his analysis was based on a reasonable basis

    C. not violated the Standard since his clients benefited from his actions

    Answer: A

    The high tech growth investment is unlikely to be suitable for the high income dividend funds managed by Haynes, hence he has violated Standard III(C). Answer B is not correct since employing diligence and having reasonable basis does not necessarily make the investment suitable for all clients. Answer C is not correct since the investment is unsuitable regardless of how it performs.

19. Which of the following statements best characterizes the requirements of Standard III(D): Performance Presentation?

    A. Members and Candidates must comply with GIPS standards

    B. Members and Candidates should encourage their firms to comply with GIPS standards

    C. Members and Candidates should only seek employment at firms that adhere to GIPS standards

    Answer: B

For members and candidates who are showing the performance history of the assets they manage, compliance with the GIPS standards is the best method to meet their obligations under Standard III(D). Members and candidates should encourage their firms to comply with the GIPS standards. Answer A is not correct because it is a firm that claims compliance with GIPS, not an individual member or candidate.

20. Steven Burrell produces a performance presentation which does not adhere to GIPs standards and includes some simulated data. Which of the following statements is most accurate in relation to the requirements of Standard III(D): Performance Presentation?

    A. Burrell is in violation of the Standards since use of simulated data is not allowed

    B. Burrell should produce separate reports for actual data and simulated data

    C. Burrell should disclose the use of simulated data in the presentation to the recipients of the information

    Answer: C

    In order to comply with the standards when not using GIPS standards, Burrell should fully disclose that results are simulated when model results are used. Answer A is not correct since simulated data is allowed, Answer B is not correct since there is no requirement in the standards to produce separate reports for simulated data.

21. Martin Green provides retirement planning advice to high net worth individuals. One of his clients, Sunhil Baal, is a successful entrepreneur who runs several small businesses locally. Green notices that Baal is currently contributing to his pension plan in manner which is very tax inefficient. He consults a colleague, Paul Rodgers and discusses the sources of income that Baal has and the pension contributions that he makes. Rodgers agrees that Baal could make significant tax savings through changing the way he contributes to his personal pension plan, and agrees to contact Baal regarding his situation. Which of the following statements is most accurate regarding Green's behaviour? Green is:

    A. In violation of Standard III(E): Preservation of Confidentiality

B. Not in violation of Standard III(E): Preservation of Confidentiality since his actions have benefitted the client

C. Not in violation of Standard III(E): Preservation of Confidentiality since Rodgers is a colleague of Green

Answer: A

The simplest, most conservative, and most effective way to comply with Standard III(E) is to avoid disclosing any information received from a client except to authorized fellow employees who are also working for the client.

Answer B is not correct because confidentiality must be maintained regardless of the good intentions of Green. Answer C is not correct since Rodgers is not currently working for Baal.

22. Which of the following situations is most likely to lead to a violation of Standard III(E): Preservation of Confidentiality? Disclosure of client information:

A. In cooperation with an investigation by the CFA Institute Professional Conduct Program

B. In attempt to introduce the client to new business contacts

C. Having gained client permission to disclose the information

Answer: B

Standard III(E): Preservation of Confidentiality states that confidential client information should not be disclosed unless the information concerns illegal activities on the part of the client, disclosure is required by law, the client gives permission for disclosure, or the member or candidate is cooperating with an investigation by the CFA Institute Professional Conduct Program

23. Sonny Etheridge is making plans to leave his current employer after 13 years of service. He plans to set up a new firm which will engage in very similar business activities as his current firm. Etheridge resigns his post, and before he leaves the employment of his current firm, makes arrangements in his own time to register his new company as a legal entity. He plans to compete aggressively with his current firm and is confident that he can have success based on the experience and

knowledge he has in the industry. Whilst he will not take any client lists from his current employer, he intends to use public information about his current clients to contact them once he has established his new firm. Is Etheridge in violation of Standard IV(A): Loyalty?

A. Yes, because he plans to compete with his current employer

B. Yes, because he plans to contact the clients of his current employer

C. No

Answer: C

Planning to compete with your current employer is not a breach of Standard IV(A): Loyalty as long as the competition does not occur until the employee has started their new employment, and the employee does not attempt to solicit the business of clients of the firm until they have ended their employment. Contacting the clients of his current employer using publically available information will not be in violation of the standard.

24. Which of the following statements is most accurate regarding the requirements on a member of candidate under Standard IV(A): Loyalty?

    A. A member or candidate can not ever engage in independent competition to their current employer

    B. A member or candidate can only engage in independent competition to their current employer if they provide full disclosure to their employer prior to engaging in the activity

    C. A member or candidate can only engage in independent competition to their current employer if they gain consent from their employer prior to engaging in the activity

    Answer: C

    Although Standard IV(A) does not preclude members or candidates from entering into an independent business while still employed, members and candidates who plan to engage in independent practice for compensation must notify their employer and describe the types of services they will render to prospective independent clients, the expected duration of the services, and the compensation for the services. Members and candidates should not render services until they receive consent from their employer to all of the terms of the arrangement.

25. Peter Morris is a senior portfolio manager at Robearn Investments. As part of his role he often makes internal presentations at Robearn concerning current market conditions and his view on the various companies in the sector that he covers. Due to his high profile and experience, Morris is approached to make public speeches and presentations on similar matters at industry dinners and conferences in return for financial compensation. According to Standard IV(B) Additional Compensation Arrangements, Morris should:

    A. Refuse the offer

    B. Disclose to Robearn the potential additional compensation from public speaking prior to engaging in the activity

    C. Obtain written consent from all parties involved prior to engaging in any public speaking

    Answer: C

    Morris delivers his presentations at Robearn as part of his employment, and giving similar speeches in a public environment can be seen as earning additional compensation from services rendered to the employer. Members and candidates must obtain permission for additional compensation/benefits because such arrangements may affect loyalties and objectivity and create potential conflicts of interest. Disclosure allows an employer to consider the outside arrangements when evaluating the actions and motivations of members and candidates. Moreover, the employer is entitled to have full knowledge of all compensation/benefit arrangements so as to be able to assess the true cost of the services members or candidates are providing.

26. A client offers their fund manager the use of their private yacht should the manager outperform the S&P500 index by ten percentage points or more. According to Standard IV(B) Additional Compensation Arrangements, the manager should:

    A. Refuse the bonus

    B. Obtain consent from their employer to receive the bonus before it is received

C. Obtain consent from their employer to enter into the arrangement regardless of whether any bonus is eventually received

Answer: C

Standard IV(B): Additional Compensation Arrangements relates to the existence of the arrangements themselves rather than the payments that may result from such arrangements.

27. A violation of the Code and Standards has occurred in a department of a financial firm. Which of the following statements is most likely to be accurate with regards to Standard IV(C): Responsibilities of Supervisors?

A. The supervisor of the department is in violation of the Standards

B. The supervisor of the department may possibly be in violation of the Standards

C. The supervisor of the department is not in violation of the Standards

Answer: B

At a minimum, Standard IV(C) requires that members and candidates with supervisory responsibility make reasonable efforts to prevent and detect violations by ensuring the establishment of effective compliance systems. If the supervisor has done this, then they have fulfilled their obligations under Standard IV(C). Should the violation have occurred due to an inadequate compliance system, however, then the supervisor will be in violation of Standard IV(C).

28. Christiana Tesi is an execution trader at Chuck Mcateer, a small institutional investment advisor that manages several mutual funds and private accounts. Her manager, Michael Bond, has recently been tipped off that Tesi is 'front running' fund orders on her personal account – an activity she has been doing for several years. Which of the following statements is most likely to be accurate?

A. The actions of both Tesi and Bond are in violation of the Standards

B. Tesi in violation of the Standards, Bond is not in violation of the Standards

C. Tesi is not in violation of the Standards, Bond is in violation o the Standards

Answer: A

Tesi's actions are in violation of Standard II(B) Market Manipulation since she is using propriety information of the firm to personally benefit. Bond, as supervisor of Tesi, is in violation of Standard IV(C): Responsibilities of Supervisors since it appears that he has not established an effective compliance system for monitoring personal dealing at Mcateer.

29. According to Standard V(A): Diligence and Reasonable Basis, provided an analyst makes reasonable and diligent efforts to determine the that the research is sound, they are permitted to use

A. Both secondary and third party research

B. Secondary research but not third party research

C. Third party research but not secondary research

Answer: A

If members and candidates rely on secondary or third-party research, they must make reasonable and diligent efforts to determine whether such research is sound. Secondary research is defined as research conducted by someone else in the member's or candidate's firm. Third-party research is research conducted by entities outside the member's or candidate's firm, such as a brokerage firm, bank, or research firm. If a member or candidate has reason to suspect that either secondary or third-party research or information comes from a source that lacks a sound basis, the member or candidate must not rely on that information.

30. Laurindo Brecker has produced a report on the equity market neutral strategy hedge fund sector. As part of his research, he has modeled a simple quantitative contrarian strategy that selects long and short weights of securities based on their recent price performance. Brecker uses daily returns over the last three months for his model, a period of very low price volatility and positive market returns. Brecker concludes that equity market neutral hedge funds are a good long term investment prospect. Brecker is:

A. In violation of Standard V(A): Diligence and Reasonable Basis since he has used simulated performance in his report and not disclosed this fact

B. In violation of Standard V(A): Diligence and Reasonable Basis since he has not conducted a thorough enough analysis before making his recommendation

C. Not in violation of Standard V(A)

Answer: A

Standard V(A) applies to the rapidly expanding use of quantitatively oriented research models and processes, such as computer-generated modeling. Members and candidates need to consider the source and time horizon of the data used as inputs in financial models. The information must effectively incorporate both positive and negative market cycles. In the development of a recommendation, the member or candidate must test the models by using volatility and performance expectations that represent a broad array of possible scenarios. By basing his analysis on only the market conditions over the last three months, Brecker has breached the Standards

31. Which of the following statements is most likely to be consistent with Standard V(B): Communication with Clients?

A. Analysts should not use opinions in research and only report facts

B. Analysts should be clear to distinguish between fact and opinion in research

C. Analysts should always have an opinion and not just state facts in research

Answer: B

Standard V(B) requires that opinion be separated from fact in research reports. Violations often occur when reports fail to separate the past from the future by not indicating that information based on estimates are opinions subject to future circumstances.

32. Saxit Asset Management has a proprietary model for valuing securities that is based on a combination of fundamental and macroeconomic factors. The model has always been run based on a statistical

technique called principal component analysis. After recent personnel changes at the firm, the head of investment management decides that the model will be no longer be used and that managers will use more subjective techniques to value investments. Clients are not informed of the change in the investment process unless they make a direct enquiry about the subject. The head of investment management is:

A. In violation of Standard V(B): Communication with Clients

B. Not in violation of Standard V(B) because the personnel changes justified the change in investment process

C. Not in violation with Standard V(B) because the change is being fully disclosed when clients enquire about the process

Answer: A

By failing to disclose to clients a substantial change to its investment process, the head of investment management of Saxit has violated Standard V(B). Clients must always be informed of changes in the investment process, regardless of the reasons why the changes occur. Only disclosing the change in process in response to an enquiry from a client is not proactively disclosing the change.

33. Henry Mullen is a research analyst who bases his research on a wide variety of sources, including digital media such as text messages, blog posts and Twitter posts. There are no local regulations that address the use of digital media sources in research reports. Which of the following statements best describes the duties imposed on Mullen under Standard V(C): Record Retention?

A. Mullen is not permitted to use these digital media sources in his research

B. Mullen is permitted to use these digital sources in his research providing all relevant information is retained

C. Mullen is permitted to use these digital sources providing he adheres to local regulations

Answer: B

Members and candidates should understand that although employers and local regulators are developing digital media retention policies, these policies may lag behind the advent of new communication channels. Such lag places greater responsibility on the individual for ensuring that all relevant information is retained. Examples of non-print media formats that should be retained include, but are not limited to, e-mails, text messages, blog posts, and Twitter posts.

34. Jim Bell is a research analyst that has recently changed employer. His original employer did not consent to Bell taking to his new employer any documentation relating to his previous recommendations. He previously had a "Strong Sell" recommendation on the leading company in his sector and wishes to initiate coverage of the company with the same rating. Bell issues a "Strong Sell" rating at his new firm and basis his recommendation on public sources and memory of information gathered at his previous firm. Bell is:

    A. In violation of Standard V(C): Record Retention

    B. Not in violation of Standard V(C): Record Retention, provided he retains records of the public sources and information gathered at his previous firm

    C. Not in violation of Standard V(C): Record Retention since experience and knowledge gained at previous employers is permitted to be used at his new employer

    Answer: A

    Standard V(C): Record Retention requires that when a member or candidate leaves a firm to seek other employment, the member or candidate cannot take the property of the firm, including original forms or copies of supporting records of the member's or candidate's work, to the new employer without the express consent of the previous employer. The member or candidate cannot use historical recommendations or research reports created at the previous firm because the supporting documentation is unavailable. For future use, the member or candidate must re-create the supporting records at the new firm with information gathered through public sources or directly from the covered company and not from memory or sources obtained at the previous employer.

    Answer B is incorrect since Bell did not receive consent to take records to his new firm, and Answer C is incorrect since records cannot be produced from memory.

35. Emily Coryell is a research analyst who has a small holding of shares in CDE Corp, a information technology services company. Coryell is asked to initiate coverage on CDE Corp. In order to comply with Standard VI(A): Conflicts of Interest, Coryell should:

    A. Refuse to write the report

    B. Disclose to her employer her personal holding in CDE Corp in writing

    C. Disclose her personal holding in CDE Corp both to her employer in writing and in the report

    Answer: C

    Standard VI(A) protects investors and employers by requiring members and candidates to fully disclose to clients, potential clients, and employers all actual and potential conflicts of interest. Although this holding may not be material, Coryell must disclose it in the report and to her employer before writing the report because of the potential perceived conflict of interest.

36. Clifford Roach is a portfolio manager for Ginger Investments. Historically Roach has been paid a constant percentage of assets under management for his service, however after a recent change in the compensation structure at Ginger, Roach is being compensated based on quarterly performance. Management at Ginger made this internal decision in order to better incentivise their managers to outperform for their clients. Consequently, Roach increases the risk of the portfolios that he manages. No disclosures of the change n compensation structure have been made to clients of Ginger. Roach has most likely:

    A. Violated both Standard III(C) Suitability and Standard VI(A) Conflicts of Interest

    B. Standard III(C) Suitability only

    C. Standard VI(A) Conflicts of Interest only

    Answer: A

    Roach is likely in breach of Standard III(C) since he has changed the risk profile of the portfolios he manages without any change in the circumstances of the investor that would justify this action. Roach has violated Standard VI(A) by failing to inform his clients of the changes in his compensation arrangement with his employer, which created a conflict of interest between his compensation and his clients' objectives.

37. Which of the following statements is least likely consistent with the recommended procedures for compliance with Standard VI(B) Priority of Transactions?

    A. Investment firms should ban all employees from participation in equity IPOs

    B. Strict Limits should be placed on investment personnel acquiring securities in private placements

    C. Investment personnel involved in the investment decision-making process should establish blackout periods prior to trades for clients

    Answer: A

    The recommendations of Standard VI(B) are that investment personnel should have limited participation in equity IPOs, not that there should be a blanket ban across all personnel. Answers B and C are recommendations for compliance.

38. Bob Bernard discovers that a junior member of staff has frequently been profiting from advanced knowledge of the firm's recommended "buy" list. He checks to see if the personal dealing of the employee has been recorded but it comes to light that the employee had never signed the personal account dealing agreement of the firm. Which of the following statements is most likely to be correct?

    A. There has been a violation of both Standard IV(C) Responsibilities of Supervisors and Standard VI(B) Priority of Transactions

    B. There has been a violation of Standard IV(C) Responsibilities of Supervisors only

    C. There has been a violation of Standard VI(B) Priority of Transactions only

    Answer: A

    The junior employee violated Standard VI(B) by placing personal transactions ahead of client transactions. In addition, Bernard violated Standard IV(C)–Responsibilities of Supervisors by permitting the employee to continue to perform his assigned tasks without having signed the personal account dealing agreement of the firm.

39. Which of the following statements is consistent with the recommended procedures for compliance with Standard VI(C) Referral Fees?

    A. Firms should completely restrict such fees

    B. Firms may completely restrict fees or enforce procedures that require disclosure of agreements prior to any payments taking place

    C. Firms may completely restrict fees or enforce procedures that require disclosure of agreements before entering into such arrangements

    Answer: C

    Standard VI(C) states the responsibility of members and candidates to inform their employer, clients, and prospective clients of any benefit received for referrals of customers and clients. Appropriate disclosure means that members and candidates must advise the client or prospective client, before entry into any formal agreement for services, of any benefit given or received for the recommendation of any services provided by the member or candidate.

40. Mike Brown is an investment adviser who has a referral agreement in place with a local mortgage broker. Brown has disclosed to his employer that a referral agreement is in place and that he will receive compensation every time the mortgage broker gains a customer on his referral. Brown is:

    A. In compliance with Standard VI(C) Referral Fees

    B. In violation of Standard VI(C) Referral Fees since he should also disclose the nature and value of the compensation

    C. In violation of Standard VI(C) Referral Fees since he should have obtained consent from his firm before entering into the referral Fee agreement

    Answer: B

Standard VI(C) states that the member or candidate must disclose the nature of the consideration or benefit—for example, flat fee or percentage basis, one-time or continuing benefit, based on performance, benefit in the form of provision of research or other noncash benefit—together with the estimated dollar value. Consideration includes all fees, whether paid in cash, in soft dollars, or in kind.

Answer C is incorrect since the standard requires disclosure, not prior approval.

41. Stella Bubsi and Larry Futura are candidates in the CFA Program. Bubsi has asked Futura about the specific details of questions appearing in the exam. Futura has declined to provide specific details, but does give the broad topical areas that were tested. Which of the following statements is most accurate?

    A. Both Bubsi and Futura have violated the Standards

    B. Bubsi has violated the Standards but Futura has not

    C. Neither Bubsi nor Futura have violated the Standards.

    Answer: A

    Standard VII(A) prohibits members from disclosing and/or soliciting confidential material gained prior to or during the exam and grading processes with those outside the CFA exam development process. Bubsi has solicited confidential information hence has violated the Standard. Confidential exam information includes the broad topics that were tested in an exam disclosed by Futura, hence he is in violation of the Standards.

42. Joe Folds has recently completed the CFA Program and has been asked his opinion of the process by Tyler Screde who is considering embarking on the Program. According to the Standards, how should Folds respond?

    A. With his opinion

    B. With fact only, not opinion

    C. He should decline to comment

    Answer: A

Standard VII(A) does not cover expressing opinions regarding CFA Institute, the CFA Program, or other CFA Institute programs. Members and candidates are free to disagree and express their disagreement with CFA Institute on its policies, its procedures, or any advocacy positions taken by the organization. When expressing a personal opinion, a candidate is prohibited from disclosing content-specific information, including any actual exam question and the information as to subject matter covered or not covered in the exam.

43. Tim Evans and Ernesto Hodges have both recently been awarded the CFA charter. They update their business cards and resumes as follows:

    Tim Evans describes himself as “one of only two qualified CFAs at my firm”.

    Ernesto Hodges replaces his name on his business card with “Ernesto Hodges, **CFA**”. Which of the following statements is most accurate?

    A. Both Evans and Hodges are in compliance with the Standards

    B. Evans is in compliance with the standards, but Hodges is not

    C. Neither Evans nor Hodges are in compliance with the Standards

    Answer: C

    According to Standard VII(B) Reference to CFA Institute, the CFA Designation, and the CFA Program both Evans and Hodges have violated the Standards. The CFA and Chartered Financial Analyst designations must always be used as adjectives, never as nouns or common names. The CFA designation should not be given more prominence (e.g., larger or bold font) than the charterholder’s name.

44. Louise Overhill, CFA, makes the following two statements on her professional networking profile page:

    Statement 1: “I passed each of the CFA examination levels in consecutive years”

    Statement 2: “Passing the three CFA examination levels in consecutive years puts me among an elite group of analysts from which employers can expect superior performance”

    How many of the statements made by Overhill are in compliance with the Standards?

A. Neither

B. Statement 1 is in compliance, but statement 2 is not

C. Statement 2 is in compliance, but statement 1 is not

Answer: B

If a candidate passes each level of the exam in consecutive years and wants to state that he or she did so, that is not a violation of Standard VII(B) because it is a statement of fact. If the candidate then goes on to claim or imply superior ability by obtaining the designation in only three years, however, he or she is in violation of Standard VII(B).

Reading 3: Introduction to the Global Investment Performance Standards (GIPS)

1. All of the following are misleading practices which justify the existence of the GIPS standards, except:
   A. Survivorship bias
   B. Representative accounts
   C. Use of Composites
2. Which of the following statements regarding the GIPS standards is most likely to be correct?
   A. Any investment manager may choose to comply with the GIPS standards
   B. GIPS compliance can be achieved on a single product or composite, or on a firm wide basis
   C. Plan sponsors, consultants and software providers can choose to comply with GIPS
3. Two investment analysts are discussing the rationale behind the existence of the GIPS Standards. The first analyst states that prospective clients and investors will benefit from the Standards. Analyst 2 insists that investment management will benefit from the Standards. Which of the following statements is most accurate?
   A. Both analysts are correct
   B. The first analyst is correct, the second analyst is incorrect
   C. The first analyst is incorrect, the second analyst is correct
4. According to the GIPS Standards, a composite is:
   A. An aggregation of one or more portfolios managed by the same fund manager
   B. An aggregation of one or more portfolios managed according to a similar investment mandate, objective or strategy

C. An aggregation of one or more portfolios managed by the same investment unit or division

5. A fund manager is considering adding the following three portfolios with similar strategy to their relevant composite:

   Portfolio A: Actual, fee-paying and discretionary

   Portfolio B: Simulated, non-fee paying and discretionary

   Portfolio C: Actual, fee-paying and non-discretionary

   Which of these portfolios must the manager include in the composite according to the GIPS Standards?

   A. Portfolio A

   B. Portfolio B

   C. Portfolio C

6. Which of the following statements regarding verification under the GIPS Standards is correct?

   A. Verification is voluntary

   B. Verification must be conducted on specific composites

   C. A firm may perform its own verification

Reading 3: Introduction to the Global Investment Performance Standards (GIPS)

1. All of the following are misleading practices which justify the existence of the GIPS standards, except:

   A. Survivorship bias

   B. Representative accounts

   C. Use of Composites

   Answer: C

   Survivorship bias is related to presenting a performance history that excludes portfolios with poor performance. 'Representative accounts' involves selecting a top performing portfolio to represent the firm's overall investment results. Use of composites, aggregations of portfolios managed to a similar mandate, is required by GIPS and aims to remove these issues from performance presentation.

2. Which of the following statements regarding the GIPS standards is most likely to be correct?

   A. Any investment manager may choose to comply with the GIPS standards

   B. GIPS compliance can be achieved on a single product or composite, or on a firm wide basis

   C. Plan sponsors, consultants and software providers can choose to comply with GIPS

   Answer: A

   Only investment management firms that actually manage assets can claim compliance with the Standards. Plan sponsors and consultants cannot claim compliance unless they actually manage assets for which they are making a claim of compliance. Similarly, software vendors cannot be compliant.

3. Two investment analysts are discussing the rationale behind the

existence of the GIPS Standards. The first analyst states that prospective clients and investors will benefit from the Standards. Analyst 2 insists that investment management will benefit from the Standards. Which of the following statements is most accurate?

A. Both analysts are correct

B. The first analyst is correct, the second analyst is incorrect

C. The first analyst is incorrect, the second analyst is correct

Answer: A

The GIPS Standards benefit two main groups: investment management firms gain from fairer competition for client funds, whilst prospective clients and investors will have a higher level of confidence in the integrity of performance presentations

4. According to the GIPS Standards, a composite is:

   A. An aggregation of one or more portfolios managed by the same fund manager

   B. An aggregation of one or more portfolios managed according to a similar investment mandate, objective or strategy

   C. An aggregation of one or more portfolios managed by the same investment unit or division

   Answer: B

   A composite is an aggregation of one or more portfolios managed according to a similar investment mandate, objective or strategy

5. A fund manager is considering adding the following three portfolios with similar strategy to their relevant composite:

   Portfolio A: Actual, fee-paying and discretionary

   Portfolio B: Simulated, non-fee paying and discretionary

   Portfolio C: Actual, fee-paying and non-discretionary

   Which of these portfolios must the manager include in the composite according to the GIPS Standards?

   A. Portfolio A

B. Portfolio B

C. Portfolio C

Answer: A

A composite must include all actual, fee paying, discretionary portfolios managed in accordance with the same investment mandate, objective or strategy.

6. Which of the following statements regarding verification under the GIPS Standards is correct?

A. Verification is voluntary

B. Verification must be conducted on specific composites

C. A firm may perform its own verification

Answer: A

Verification is a voluntary process carried out by a third party to test whether a firm claiming compliance has followed the GIPS Standards. Verification is performed with respect to an entire firm, not on specific composites. A firm cannot perform its own verification.

Reading 4: Global Investment Performance Standards

1. Which of the following is a correct description of a key feature of the GIPS standards?
   A. Firms must include all portfolios in at least one composite
   B. In order to claim compliance, firms must adhere to the requirements and recommendations included in the GIPS Standards
   C. Firms should go beyond the minimum requirements of the GIPS Standards
2. An investment firm was founded ten years ago and adopted the GIPS Standards two years ago. Which of the following is the minimum number of years the firm must show in order to adhere to GIPS?
   A. Five
   B. Seven
   C. Ten
3. Where existing laws, regulations, or industry standards already impose requirements that conflict with the GIPS Standards, firms should:
   A. Adhere to the GIPS Standards
   B. Adhere to the laws and regulations and disclose the conflict
   C. Refrain from producing performance presentations
4. All of the following areas of performance presentations are provisions of the GIPS Standards, except:
   A. Fundamentals of Compliance
   B. Wrap Fee/SMA Portfolios
   C. Firm Definition
5. The compliance statement of a firm claiming to comply with the GIPS Standards is contained in with provision of the GIPS Standards?

A. Provision 0 – Fundamentals of Compliance

B. Provision 4 - Disclosure

C. Provision 5 – Presentation and Reporting

Reading 4: Global Investment Performance Standards

1. Which of the following is a correct description of a key feature of the GIPS standards?

   A. Firms must include all portfolios in at least one composite

   B. In order to claim compliance, firms must adhere all requirements and recommendations included in the GIPS Standards

   C. Firms should go beyond the minimum requirements of the GIPS Standards

   Answer: C

   The correct key features of GIPS are; Firms must include all actual, fee-paying discretionary portfolios in at least one composite, firms must adhere to the requirements included in the GIPS Standards, and firms should go beyond the minimum requirements of the GIPS Standards and adhere to the recommendations to achieve best practice. Answer A is not correct since firms must only comply with requirements in order to claim compliance with GIPS. Answer A is not correct since it is only *actual, fee-paying, discretionary* portfolios must be included composites.

2. An investment firm was founded ten years ago and adopted the GIPS Standards two years ago. Which of the following is the minimum number of years the firm must show in order to adhere to GIPS?

   A. Five

   B. Seven

   C. Ten

   Answer: B

   According to the GIPS Standards the firm should initially show five years of performance data when it begins using the Standards. After that time, the firm must add a year every year until the performance record is at least 10 years.

3. Where existing laws, regulations, or industry standards already impose requirements that conflict with the GIPS Standards, firms should:

   A. Adhere to the GIPS Standards

   B. Adhere to the laws and regulations and disclose the conflict

   C. Refrain from producing performance presentations

   Answer: B

   In cases in which laws and/or regulations conflict with the GIPS Standards, firms are required to comply with the laws and regulations and make full disclosure of the conflict in the compliant presentation.

4. All of the following areas of performance presentations are provisions of the GIPS Standards, except:

   A. Fundamentals of Compliance

   B. Wrap Fee/SMA Portfolios

   C. Firm Definition

   Answer: C

   Fundamentals of Compliance is provision number 0, Wrap Fee/SMA Portfolios is provision number 8. Firm definition is an issue addressed in provision 0.

5. The compliance statement of a firm claiming to comply with the GIPS Standards is contained in with provision of the GIPS Standards?

   A. Provision 0 – Fundamentals of Compliance

   B. Provision 4 - Disclosure

   C. Provision 5 – Presentation and Reporting

   Answer: B

   Provision 4 - Disclosures deals with the claim of compliance that a firm claiming compliance with the GIPS Standards must make

Quantitative Methods for Valuation

Reading 5: The Time Value of Money

1. James has just inherited $100,000. His goal is to accumulate $200,000 in 15 years. How much of the inheritance can he spend on a car right now if the remainder will be invested at 12% compounded semiannually?

   A. $34,822

   B. $39,491

   C. $65,178

2. Alison plans to deposit $500 in her savings account at the end of each quarter for the next 10 years. The interest rate is 10% per year compounded quarterly. After 10 years, her account balance and the total amount of interest that she would have earned are *closest to:*

	Account Balance	**Interest Earned**
A.	$33,701	$13,254
B.	$33,701	$13,701
C.	$32,504	$13,254

3. What sum should be deposited today at 8% compounded quarterly if one wants to accumulate $200,000 in 6 years? How much interest will be earned during the period?

	Amount Deposited Today	**Interest Earned**
A.	$124,344	$69,788
B.	$124,344	$75,656
C.	$130,212	$75,656

4. If an investment of $400,000 were to grow to $5,000,000 over a period of 20 years, what is the stated annual rate at which it must be invested, given that the return is compounded semiannually?

   A. 6.52%

   B. 6%

C. 13.04%

5. A company takes a loan of $200,000 at an interest rate of 12%. The loan must be paid back in 7 years through equal end-of-year annual installments. The value of principle outstanding after the second payment has been made is *closest to*:

   A. $43,824

   B. $19,824

   C. $157,974

6. George is thinking of taking a loan of $50,000 to buy a house. The loan will be fully amortized with equal monthly installments over 10 years. Given that the interest rate is 8% compounded monthly, the amount of each mortgage payment and the effective interest rate will be *closest to*:

	Mortgage Payment	Effective Interest Rate
A.	$607	8.3%
B.	$615	8.15%
C.	$606	8.3%

7. James must bear his annual college tuition of $8,000 for 3 years, starting with the beginning of next year. How much must he invest today at 10%, compounded annually to meet his requirements? What is the balance in his account after the first withdrawal?

	Amount Deposited Today	Balance After First Withdrawal
A.	$19,895	$14,375
B.	$19,895	$13,884
C.	$20,825	$14,375

8. Martha invests $500,000 at 10% compounded annually. How many annual withdrawals of exactly $60,000 can she make assuming that withdrawals will be made at the beginning of each year starting today?

   A. 13 years

B. 14 years

C. 15 years

9. An annuity pays $50,000 annually at the beginning of each year for 15 years. If the discount rate equals 8%, the present value of the annuity is *closest to*:

   A. $462,212

   B. $427,974

   C. $453,294

10. What is the future value of an annuity due that pays $500 for 5 years given that the interest rate is 0%?

   A. $2,500

   B. $2,000

   C. None of the above

11. In order to withdraw $1,000 at the beginning of each of the next 4 years, how much must an investor invest today? Assume that the annual interest rate is 9%.

   A. $3,531

   B. $3,240

   C. $3,128

12. Which of the following is *least likely* a component of the required rate of return on a security after the nominal risk-free rate has been deducted?

   A. Maturity risk premium

   B. Default risk premium

   C. Inflation risk premium

13. Which of the following *least likely* offers a series of finite cash flows?

   A. Ordinary annuity

   B. Annuity due

   C. Perpetuity

14. A loan is amortized over time with equal annual payments. How do the principal and interest components of the annual payment change over time?

	Interest Component	Principal Repayment Component
A.	Decreases	Increases
B.	Increases	Decreases
C.	Decreases	Decreases

15. Bill wants to accumulate $15,000 in 4 years by making four equal end-of-year deposits. Given that the interest rate is 7%, what is the minimum amount that he should deposit each year?

A. $3,378

B. $4,428

C. $3,157

16. Robert received $150,000 and invested it at 6% compounded annually. He wants to purchase a piece of property worth $200,000 after 7 years. He will *most likely*:

A. Be able to purchase the property and have excess funds amounting to $25,544

B. Be able to purchase the property and have excess funds amounting to $2,554

C. Not be able to purchase the property as he will be $2,554 short.

17. If $20 invested today is worth $200 in 5 years, what is the stated annual rate of return assuming monthly compounding?

A. 58.5%

B. 46.95%

C. 45%

18. At a 100% annual interest rate, a rational investor would be indifferent between receiving $20 today and:

A. $60 after 2 years

B. $30 after 1 year

C. $160 after 3 years

19. An annuity pays $12,000 every year for 5 years with the first payment at the end of Year 4. Given a 13% discount rate, the present value of this annuity is *closest to*?

    A. $42,207

    B. $29,251

    C. $28,334

20. Larry purchases a car worth $20,000 by making an initial payment of $3,000. The rest of the amount is financed with a loan that requires equal monthly payments over 24 months. Assuming a 12% interest rate implicit in the loan, the monthly installment is *closest to*:

    A. $800

    B. $11,834

    C. $2,569

21. Mary invested $3,000 in an account with an interest rate of 15% compounded continuously. After 5 years, the value of her investment will be *closest to*:

    A. $6,351

    B. $6,030

    C. $6,240

22. Which of the following is *least likely* a premium that compensates investors for bearing risk?

    A. Default risk premium

    B. Maturity premium

    C. Payback premium

23. Which of the following statements is *most accurate*?

    A. The longer the time period till the future amount is received, the higher its present value

    B. The higher the discount rate, the higher the present value of the amount

C. The shorter the time period till the future amount is received, the higher its present value

24. The value of an investment of $500 forty years from today, given that it is made 3 years from now at an interest rate of 7.25% is *closest to*:

A. $6,663

B. $8,220

C. $7,146

25. Brian will receive $1,000 at the end of each year for the next 21 years. Given that the interest rate is 8%, the value of these payments 43 years from today is *closest to*:

A. $274,126

B. $50,423

C. $55,457

26. An investor will receive $365 at the end of each year for 13 years. The first payment will be received 4 years from now. Given that the interest rate is 3%, the present value of this cash flow stream is *closest to*:

A. $3,552

B. $3,882

C. $3,449

27. An investment of $3,000 is made at the beginning of each of the next 7 years. Given an interest rate of 0.67%, the value of this investment 11 years from today is *closest to*:

A. $21,570

B. $22,154

C. $22,007

28. An investor expects to receive $79 at the beginning of each year for 3 years. The first payment will be received 5 years from today. Given a discount rate of 6%, the present value of the annuity is *closest to*:

A. $167.26

B. $177.32

C. $211.13

29. A company pays a $2 per share annual dividend on its preferred stock. Given that the required rate of return is 5% and that this dividend policy will continue forever, the value of the preferred stock today is *closest to*:

A. $19

B. $40

C. $55

30. Given a discount rate of 3%, the value as of the end of Year 5 of the following cash flow stream is *closest to*:

Year 0	–$200
Year 1	$150
Year 2	$250
Year 3	–$100
Year 4	$400
Year 5	–$75

A. $425.30

B. $441.06

C. $492.69

31. Given a discount rate of 3%, the present value of the cash flow stream presented below is *closest to*:

Year 0	–$1,100
Year 1	$1,500
Year 2	$750
Year 3	–$1,000
Year 4	$4,000
Year 5	–$275

A. $3,464.85

B. $3,342.72

C. $3,875.64

32. Sarah wants to accumulate $10,000 over the next 10 years. Given a rate of return of 10%, the fixed amount that she should deposit in the bank at the end of each year for the next 10 years is *closest to*:

A. $657.45

B. $627.45

C. $557.45

33. An investor puts $3,000 in a bank account that offers an annual interest rate of 11% compounded daily. The account balance at the end of Year 1 will be *closest to*:

A. $3,348.78

B. $3,000.10

C. $2,997.44

34. Over the next 5 years, MT Technologies expects to earn the following amounts:

Year 1	$90 million
Year 2	$76 million
Year 3	$92 million
Year 4	$105 million
Year 5	$103 million

The annually compounded growth rate based on the company's forecasts is *closest to*:

A. 7.96%

B. 2.74%

C. 3.43%

35. The effective annual rate for an automobile loan that has an interest rate of 7%, compounded monthly is *closest to*:

A. 7.35%

B. 7.23%

C. 8.12%

36. Sarah wants to start college after 5 years for which she wants to accumulate money by making annual deposits in her bank account beginning at the end of Year 1. She estimates that she will have to make a payment of $8,000 at the beginning of each year through the 4-year study program with the first payment to be made at the beginning of Year 6. Given a discount rate of 11%, the amount that must be deposited at the end of each year for the next 5 years to satisfy the eventual payment obligations is *closest to*:

A. $3,985

B. $6,400

C. $4,424

37. Juan Carlos wants to save money for his son's college tuition. His son will start college after 10 years and Carlos expects to make annual payments of $12,500 at the beginning of each year for a 5-year study program with the first payment to be made at the beginning of Year 11. Given a discount rate of 12% the amount that Carlos must deposit at the end of each of the next 10 years is *closest to*:

A. $2,876

B. $2,568

C. $2,658

38. James must make 6 annual payments of $2,000 each starting at the beginning of Year 5. Given a discount rate of 10%, which of the following methods will enable him to make the required payments:

Method 1: Make 4 equal annual deposits of $1,800 beginning at the end of Year 1.

Method 2: Make 2 equal annual deposits of $4,600 beginning at the end of Year 3.

A. Method 1 only

B. Method 2 only

C. Both the methods

39. Sonia wants to invest $5,000 and is considering the following investments over a horizon of 8 years:

    Investment 1: Invest in a mutual fund which is expected to earn 8% for the first 3 years and 12% thereafter.

    Investment 2: Invest in a savings account which is expected to offer 11% a year compounded annually.

    Investment 3: Invest in gold whose current value is expected to double in 8 years.

    Which of these investments offers the highest return based on her expectations?

    A. Investment 1

    B. Investment 2

    C. Investment 3

40. Martha is 30 years old and wants to retire in 20 years at the age of 50. She expects to earn 12% on her savings prior to retirement and 8% thereafter. Martha wants to be able to withdraw $18,000 every year at the beginning of each year for 30 years from the age of 50 to 80. The amount that she must deposit at the end of each year for the next 20 years is *closest to*:

    A. $2,812

    B. $2,724

    C. $3,037

41. Susan borrowed $5,000 for renovating her home. The loan carries an interest rate of 9% and must be repaid in fixed annual end-of-year installments over the next 5 years. The interest component of the second payment is *closest to*:

    A. $450

    B. $375

    C. $325

42. Henry borrowed $12,000 to start his own business. The loan must be repaid through four equal end-of-year payments and carries an interest rate of 8%. The principal component of the second payment is *closest to*:

A. $2,876

B. $2,663

C. $3,623

43. Mrs. Doherty wants to gift a car worth $24,000 to her son for his 18^{th} birthday. She has 40% of the funds, and borrows the rest for 4 years at 8% compounded monthly. The fixed monthly payment that she will have to make to retire the loan in 48 months is *closest to*:

A. $286

B. $234

C. $352

44. William is evaluating the following options for investing $10,000 for 5 years:

Investment A: Offers a 10% interest rate compounded monthly.

Investment B: Offers a 12% interest rate compounded semi-annually.

Investment C: Offers an 11% interest rate compounded quarterly.

Which of the following statements is *most accurate*?

A. Investment A offers $1,455 less than Investment B.

B. Investment C offers a $704 greater return than Investment B.

C. Investment A offers a $751 greater return than Investment C.

45. Given a discount rate of 11%, which of the following cash flow streams has the *highest* present value?

A. 12 equal payments of $600 beginning at the end of Year 1.

B. 10 equal payments of $600 beginning immediately.

C. 12 equal payments of $550 beginning immediately.

Reading 5: The Time Value of Money

1. James has just inherited $100,000. His goal is to accumulate $200,000 in 15 years. How much of the inheritance can he spend on a car right now if the remainder will be invested at 12% compounded semiannually?

   A. $34,822

   B. $39,491

   C. $65,178

   Answer: C

   FV = −200,000; I/Y = 12%/2 = 6; N = (15)(2) = 30; CPT PV; PV = $34,822.03

   Amount that he can spend in the current period = $100,000 − $34,822 = $65,178

2. Alison plans to deposit $500 in her savings account at the end of each quarter for the next 10 years. The interest rate is 10% per year compounded quarterly. After 10 years, her account balance and the total amount of interest that she would have earned are *closest to:*

	Account Balance	**Interest Earned**
A.	$33,701	$13,254
B.	$33,701	$13,701
C.	$32,504	$13,254

   Answer: B

   PMT = −$500; N = (10)(4) = 40; I/Y = 10%/4 = 2.5; PV = 0; CPT FV;

   FV = Account balance after 10 years = $33,701.28

   Over the period she will make 40 deposits worth $500 each for a total of $20,000

   Therefore, total interest income = $33,701 − $20,000 = $13,701

3. What sum should be deposited today at 8% compounded quarterly if one wants to accumulate $200,000 in 6 years? How much interest will be earned during the period?

	Amount Deposited Today	**Interest Earned**
A.	$124,344	$69,788
B.	$124,344	$75,656
C.	$130,212	$75,656

Answer: B

I/Y = 8/4 = 2%; N = (6)(4) = 24; FV = −$200,000; CPT PV; PV = $124,344

Interest earned = FV – PV = $200,000 – $124,344 = $75,656

4. If an investment of $400,000 were to grow to $5,000,000 over a period of 20 years, what is the stated annual rate at which it must be invested, given that the return is compounded semiannually?

A. 6.52%

B. 6%

C. 13.04%

Answer: C

PV = −$400,000; FV = $5,000,000; N = (20)(2) = 40; CPT I/Y;

I/Y = Semiannual discount rate = 6.52%.

Stated annual rate = 6.52 × 2 = 13.04%

5. A company takes a loan of $200,000 at an interest rate of 12%. The loan must be paid back in 7 years through equal end-of-year annual installments. The value of principle outstanding after the second payment has been made is *closest to*:

A. $43,824

B. $19,824

C. $157,974

Answer: C

PV = \$200,000; N = 7; I/Y = 12; CPT PMT; PMT = \$43,823.55

Amortization table

Year	Balance	Interest	Payment	Principal Repaid	End Balance
1	\$200,000	\$24,000.0	\$43,823.55	\$19,823.6	\$180,176.5
2	\$180,176.5	\$21,621.2	\$43,823.55	\$22,202.4	\$157,974.09

An easier way to solve this question is to simply compute the PV of the remaining payments at the end of Year 2.

N = 5; I/Y = 12; PMT = −\$43,823.55; CPT PV; PV = \$157,974.09

6. George is thinking of taking a loan of \$50,000 to buy a house. The loan will be fully amortized with equal monthly installments over 10 years. Given that the interest rate is 8% compounded monthly, the amount of each mortgage payment and the effective interest rate will be *closest to*:

	Mortgage Payment	Effective Interest Rate
A.	\$607	8.3%
B.	\$615	8.15%
C.	\$606	8.3%

Answer: A

PV = \$50,000; N = 120; I/Y = 8/12 = 0.67; CPT PMT; PMT = \$606.74

Effective interest rate = $[(1 + 0.006667)^{12}] - 1 = 0.083$ or 8.3% OR you could use the Interest conversion function on your BA II Plus:

[2ND][2]	to enter the ICONV function
[2ND][CE|C]	to clear memory
[8][ENTER]	enter the nominal interest rate
[↓][↓][12][ENTER]	enter the compounding periods per year C/Y
[↑][CPT]	compute the effective interest rate

7. James must bear his annual college tuition of \$8,000 for 3 years,

starting with the beginning of next year. How much must he invest today at 10%, compounded annually to meet his requirements? What is the balance in his account after the first withdrawal?

	Amount Deposited Today	Balance After First Withdrawal
A.	$19,895	$14,375
B.	$19,895	$13,884
C.	$20,825	$14,375

Answer: B

He needs to make the first withdrawal at the beginning of next year (or at the end of this year) at t = 1

N = 3; PMT = −$8,000; I/Y = 10; CPT PV; PV = $19,894.82

At the end of Year 1, the balance in his account is calculated as:

N = 2; PMT = −$8,000; I/Y = 10; CPT PV; PV = $13,884.29

8. Martha invests $500,000 at 10% compounded annually. How many annual withdrawals of exactly $60,000 can she make assuming that withdrawals will be made at the beginning of each year starting today?

   A. 13 years

   B. 14 years

   C. 15 years

   Answer: B

   Switch your calculator to BGN mode.

   PV = −$500,000; I/Y = 10; PMT = $60,000; CPT N; N = 14.86 years.

   Therefore, 14 withdrawals of $60,000 can be made (the 15th withdrawal will be less than $60,000).

   Note: The signs of PMT and PV must be different.

9. An annuity pays $50,000 annually at the beginning of each year for 15 years. If the discount rate equals 8%, the present value of the annuity is *closest to*:

A. \$462,212

B. \$427,974

C. \$453,294

Answer: A

Switch your calculator to BGN mode.

PMT = −\$50,000; I/Y = 8; N = 15; CPT PV; PV = \$462,211.85

10. What is the future value of an annuity due that pays \$500 for 5 years given that the interest rate is 0%?

A. \$2,500

B. \$2,000

C. None of the above

Answer: A

Since the interest rate is 0%, the PV and FV of the payments are equal. The annuity is simply worth the sum of all the payments. \$500 × 5 = \$2,500

11. In order to withdraw \$1,000 at the beginning of each of the next 4 years, how much must an investor invest today? Assume that the annual interest rate is 9%.

A. \$3,531

B. \$3,240

C. \$3,128

Answer: A

Switch your calculator to BGN mode.

PMT = −\$1,000; N = 4; I/Y = 9; CPT PV; PV = \$3,531

12. Which of the following is *least likely* a component of the required rate of return on a security after the nominal risk-free rate has been deducted?

A. Maturity risk premium

B. Default risk premium

C. Inflation risk premium

Answer: C

The required rate of return is the sum of nominal risk-free rate of return (which **includes** the real risk-free rate of return and an inflation premium), maturity risk premium, default risk premium, and liquidity risk premium.

13. Which of the following *least likely* offers a series of finite cash flows?

    A. Ordinary annuity

    B. Annuity due

    C. Perpetuity

    Answer: C

    A perpetuity offers a series of cash flows that go on forever.

14. A loan is amortized over time with equal annual payments. How do the principal and interest components of the annual payment change over time?

	Interest Component	Principal Repayment Component
A.	Decreases	Increases
B.	Increases	Decreases
C.	Decreases	Decreases

    Answer: A

    The payments made over time reduce the outstanding principal amount. Therefore, the interest component decreases with each payment. Since all payments are equal, a reduction in the interest component implies an increase in the principal repayment component.

15. Bill wants to accumulate $15,000 in 4 years by making 4 equal end-of-year deposits. Given that the interest rate is 7%, what is the minimum amount that he should deposit each year?

    A. $3,378

    B. $4,428

    C. $3,157

Answer: A

FV = $15,000; I/Y = 7; N = 4; CPT PMT; PMT= −$3,378.

Note: Your calculator must be in END mode.

16. Robert received $150,000 and invested it at 6% compounded annually. He wants to purchase a piece of property worth $200,000 after 7 years. He will *most likely*:

    A. Be able to purchase the property and have excess funds amounting to $25,544

    B. Be able to purchase the property and have excess funds amounting to $2,554

    C. Not be able to purchase the property as he will be $2,554 short

    Answer: A

    PV = $150,000; N = 7; I/Y = 6; CPT FV; FV= −$225,544.

    Therefore, he will be able to buy the property for $200,000 and still save $25,544.

17. If $20 invested today is worth $200 in 5 years, what is the stated annual rate of return assuming monthly compounding?

    A. 58.5%

    B. 46.95%

    C. 45%

    Answer: B

    PV = −$20; N = 5 × 12 = 60; FV = $200; CPT I/Y; I/Y = 3.9122%

    Rate of return = 3.9122 × 12 = 46.95%

    Note: PV and FV must have opposite signs.

18. At a 100% annual interest rate, a rational investor would be indifferent between receiving $20 today and:

    A. $60 after 2 years

    B. $30 after 1 year

    C. $160 after 3 years

Answer: C

At an interest rate of 100%, \$20 will be worth \$40 in 1 year, \$80 in 2 years, and \$160 in 3 years.

19. An annuity pays \$12,000 every year for 5 years with the first payment at the end of Year 4. Given a 13% discount rate, the present value of this annuity is *closest to*?

    A. \$42,207

    B. \$29,251

    C. \$28,334

    Answer: B

    To solve this problem, we first find the present value (at the end of Year 3) of the 5- year annuity, and then discount it for another 3 years to compute its PV today.

    Step 1: PMT = −\$12,000; N = 5; I/Y = 13; CPT PV; PV = −\$42,206.77

    Step 2: FV = −\$42,206.77; N = 3; I/Y = 13; CPT PV; PV = \$29,251.41

20. Larry purchases a car worth \$20,000 by making an initial payment of \$3,000. The rest of the amount is financed with a loan that requires equal monthly payments over 24 months. Assuming a 12% interest rate implicit in the loan, the monthly installment is *closest to*:

    A. \$800

    B. \$11,834

    C. \$2,569

    Answer: A

    An amount of \$17,000 has to be paid back over the next 2 years.

    I/Y = 12/12 = 1; N = 12 × 2 = 24; PV = −\$17,000, CPT PMT; PMT = \$800.25

21. Mary invested \$3,000 in an account with an interest rate of 15% compounded continuously. After 5 years, the value of her investment will be *closest to*:

    A. \$6,351

B. $6,030

C. $6,240

Answer: A

$FV = PVe^{rt}$

$PV = -\$3,000$; $r = 0.15$; $t = 5$

$FV = \$6,351$

22. Which of the following is *least likely* a premium that compensates investors for bearing risk?

    A. Default risk premium

    B. Maturity premium

    C. Payback premium

    Answer: C

    Default risk premium, inflation premium, liquidity premium, and maturity premium are examples of premiums that compensate investors for taking on different kinds of risks.

23. Which of the following statements is *most accurate*?

    A. The longer the time period till the future amount is received, the higher its present value

    B. The higher the discount rate, the higher the present value of the amount

    C. The shorter the time period till the future amount is received, the higher its present value

    Answer: C

    For a given interest rate, the present value increases as the number of periods decreases.

    For a given number of periods, the present value **decreases** as the interest rate increases.

24. The value of an investment of $500 forty years from today, given that it is made 3 years from now at an interest rate of 7.25% is *closest to*:

A. $6,663

B. $8,220

C. $7,146

Answer: A

PV = −$500; N = 37; I/Y = 7.25; CPT FV; FV = $6,663.

25. Brian will receive $1,000 at the end of each year for the next 21 years. Given that the interest rate is 8%, the value of these payments 43 years from today is *closest to*:

A. $274,126

B. $50,423

C. $55,457

Answer: A

N = 21; PMT = $1,000; I/Y = 8; CPT FV; FV = −$50,423.

This is the future value of the cash flow stream after 21 years. Next we must determine the value of these payments after another 22 years.

N = 22; PV = −$50,423; I/Y = 8; CPT FV; FV = $274,126.

26. An investor will receive $365 at the end of each year for 13 years. The first payment will be received 4 years from now. Given that the interest rate is 3%, the present value of this cash flow stream is *closest to*:

A. $3,552

B. $3,882

C. $3,449

Answer: A

N = 13; PMT = $365; I/Y = 3; CPT PV; PV = $3,881.76

This is the value of the cash flow stream 3 years from now. We must discount this value back to t = 0 to compute its present value.

N = 3; I/Y = 3; FV = −$3,881.76; CPT PV; PV = $3,552.36

27. An investment of $3,000 is made at the beginning of each of the next 7 years. Given an interest rate of 0.67%, the value of this investment 11

years from today is *closest to*:

A. \$21,570

B. \$22,154

C. \$22,007

Answer: B

This cash flow stream is an annuity due.

With the calculator in “END” mode:

PMT = −\$3,000; N = 7; I/Y = 0.67; CPT FV; FV = \$21,426.85.

The value of the annuity due at the end of Year 7 is:

\$21,426.85 × 1.0067 = \$21,570.41

The future value of the cash flow stream after another 4 years (Year 11) equals:

N = 4; I/Y = 0.67; PV = −\$21,570.41; CPT FV; FV = \$22,154.32

28. An investor expects to receive \$79 at the beginning of each year for 3 years. The first payment will be received 5 years from today. Given a discount rate of 6%, the present value of the annuity is *closest to*:

A. \$167.26

B. \$177.32

C. \$211.13

Answer: A

With the calculator in “END” mode:

PMT = \$79; N = 3; I/Y = 6; CPT PV; PV = −\$211.17.

The present value of the annuity due at the end of Year 5 equals:

\$211.17 × 1.06 = \$223.84

Finally, calculate the present value of this amount:

FV = −\$223.84, N = 5, I/Y = 6, CPT PV; PV = \$167.26.

29. A company pays a \$2 per share annual dividend on its preferred stock. Given that the required rate of return is 5% and that this dividend

policy will continue forever, the value of the preferred stock today is *closest to*:

A. $19

B. $40

C. $55

Answer: B

The value of preferred stock equals D/P = 2 / 0.05 = $40.

30. Given a discount rate of 3%, the value as of the end of Year 5 of the following cash flow stream is *closest to*:

Year 0	−$200
Year 1	$150
Year 2	$250
Year 3	−$100
Year 4	$400
Year 5	−$75

A. $425.3

B. $441.06

C. $492.69

Answer: B

FV = $[-200 \times (1.03)^5] + [150 \times (1.03)^4] + [250 \times (1.03)^3] - [100 \times (1.03)^2] + [400 \times 1.03] - 75$

FV = $441.063

31. Given a discount rate of 3%, the present value of the cash flow stream presented below is *closest to*:

Year 0	−$1,100
Year 1	$1,500
Year 2	$750

Year 3	−$1,000
Year 4	$4,000
Year 5	−$275

A. $3,464.85

B. $3,342.72

C. $3,875.64

Answer: A

[CF] [2ND] [FV] [2ND] [CE|C]

1,100 [+|−] [ENTER] [↓]

1,500 [ENTER] [↓] [↓]

750 [ENTER] [↓] [↓]

1,000 [+|−] [ENTER] [↓] [↓]

4,000 [ENTER] [↓] [↓]

275 [+|−] [ENTER]

[NPV] 3 [ENTER] [↓] [CPT]

NPV = 3,464.847

32. Sarah wants to accumulate $10,000 over the next 10 years. Given a rate of return of 10%, the fixed amount that she should deposit in the bank at the end of each year for the next 10 years is *closest to*:

A. $657.45

B. $627.45

C. $557.45

Answer: B

FV = −$10,000; I/Y = 10; N = 10; CPT PMT; PMT = $627.45.

33. An investor puts $3,000 in a bank account that offers an annual interest rate of 11% compounded daily. The account balance at the end of Year 1 will be *closest to*:

A. $3,348.78

B. $3,000.10

C. $2,997.44

Answer: A

PV = −$3,000, I/Y = 11/365; N = 365; CPT FV; FV = $3,348.78.

34. Over the next 5 years, MT Technologies expects to earn the following amounts:

Year 1	$90 million
Year 2	$76 million
Year 3	$92 million
Year 4	$105 million
Year 5	$103 million

The annually compounded growth rate based on the company's forecasts is *closest to*:

A. 7.96%

B. 2.74%

C. 3.43%

Answer: C

Annual rate of return = $(103 / 90)^{1/4} - 1 = 3.43\%$

35. The effective annual rate for an automobile loan that has an interest rate of 7%, compounded monthly is *closest to*:

A. 7.35%

B. 7.23%

C. 8.12%

Answer: B

EAY = $[1 + (0.07/12)]^{12} - 1 = 7.23\%$

36. Sarah wants to start college after 5 years for which she wants to accumulate money by making annual deposits in her bank account beginning at the end of Year 1. She estimates that she will have to

make a payment of $8,000 at the beginning of each year through the 4-year study program with the first payment to be made at the beginning of Year 6. Given a discount rate of 11%, the amount that must be deposited at the end of each year for the next 5 years to satisfy the eventual payment obligations is *closest to*:

A. $3,985

B. $6,400

C. $4,424

Answer: C

With the calculator in BGN mode:

N = 4; I/Y = 11; PMT = −$8,000; CPT PV; PV → $27,549.72 (PV of obligations at the end of Year 5/ Beginning of Year 6)

With the calculator in END mode:

N = 5; I/Y = 11; FV = −$27,549.72 (required amount); CPT PMT; PMT → $4,423.67

37. Juan Carlos wants to save money for his son's college tuition. His son will start college after 10 years and Carlos expects to make annual payments of $12,500 at the beginning of each year for a 5-year study program with the first payment to be made at the beginning of Year 11. Given a discount rate of 12% the amount that Carlos must deposit at the end of each of the next 10 years is *closest to*:

A. $2,876

B. $2,568

C. $2,658

Answer: A

With the calculator in BGN mode:

N = 5; I/Y = 12; PMT = −$12,500; CPT PV; PV → $50,466.867

With the calculator in END mode:

N = 10; I/Y = 12; FV = −$50,466.867; CPT PMT; PMT → $2,875.81

38. James must make 6 annual payments of $2,000 each starting at the

beginning of Year 5. Given a discount rate of 10%, which of the following methods will enable him to make the required payments:

Method 1: Make 4 equal annual deposits of $1,800 beginning at the end of Year 1.

Method 2: Make 2 equal annual deposits of $4,600 beginning at the end of Year 3.

A. Method 1 only

B. Method 2 only

C. Both the methods

Answer: B

With the calculator in BGN mode:

N = 6; I/Y = 10; PMT = −$2,000; CPT PV; PV → $9,581.574

The required amount at the beginning of Year 5 is $9,581.574.

With the calculator in END mode:

Method 1:

N = 4; I/Y = 10; PMT = −$1,800; CPT FV; FV → $8,353.8

Method 2:

N = 2; I/Y = 10; PMT = −$4,600; CPT FV; FV → $9,660

Method 2 will enable James to make the required payments as the future value of the amounts deposited is greater than the value of the required payments (at the beginning of Year 5).

39. Sonia wants to invest $5,000 and is considering the following investments over a horizon of 8 years:

    Investment 1: Invest in a mutual fund which is expected to earn 8% for the first 3 years and 12% thereafter.

    Investment 2: Invest in a savings account which is expected to offer 11% a year compounded annually.

    Investment 3: Invest in gold whose current value is expected to double in 8 years.

Which of these investments offers the highest return based on her expectations?

A. Investment 1

B. Investment 2

C. Investment 3

Answer: B

Investment 1:

N = 3; I/Y = 8; PV = −\$5,000; CPT FV; FV → \$6,298.56

N = 5; I/Y = 12; PV = −\$6,298.56; CPT FV; FV → \$11,100.215

Investment 2:

N = 8; I/Y = 11; PV = −\$5,000; CPT FV; FV → \$11,522.689

Investment 3:

Value of \$5,000 investment in 8 years = \$5,000 × 2 = \$10,000

40. Martha is 30 years old and wants to retire in 20 years at the age of 50. She expects to earn 12% on her savings prior to retirement and 8% thereafter. Martha wants to be able to withdraw \$18,000 every year at the beginning of each year for 30 years from the age of 50 to 80. The amount that she must deposit at the end of each year for the next 20 years is *closest to*:

    A. \$2,812

    B. \$2,724

    C. \$3,037

    Answer: C

    With the calculator in BGN mode:

    N = 30; I/Y = 8; PMT = −\$18,000; CPT PV; PV → \$218,851.31 (Value of withdrawals during retirement)

    With the calculator in END mode:

    N = 20; I/Y = 12; FV = −\$218,851.31; CPT PMT; PMT → \$3,037.39

41. Susan borrowed \$5,000 for renovating her home. The loan carries an

interest rate of 9% and must be repaid in fixed annual end-of-year installments over the next 5 years. The interest component of the second payment is *closest to*:

A. \$450

B. \$375

C. \$325

Answer: B

N = 5; I/Y = 9; PV = \$5,000; CPT PMT; PMT = −\$1,285.462

Interest component of the first payment = \$5,000 × 0.09 = \$450

Principal component of the first payment = \$1,285.462 – \$450 = \$835.462

Interest component of the second payment = (\$5,000 – \$835.462) × 0.09 = \$374.81

42. Henry borrowed \$12,000 to start his own business. The loan must be repaid through four equal end-of-year payments and carries an interest rate of 8%. The principal component of the second payment is *closest to*:

A. \$2,876

B. \$2,663

C. \$3,623

Answer: A

N = 4; I/Y = 8; PV = \$12,000; CPT PMT; PMT = −\$3,623.05

Interest component of the first payment = \$12,000 × 0.08 = \$960

Principal component of the first payment = \$3,623.05 – \$960 = \$2,663.05

Interest component of the second payment = (\$12,000 – \$2,663.05) × 0.08 = \$746.96

Principal component of the second payment = \$3,623.05 – \$746.96 = \$2,876.09

43. Mrs. Doherty wants to gift a car worth \$24,000 to her son for his 18^{th}

birthday. She has 40% of the funds, and borrows the rest for 4 years at 8% compounded monthly. The fixed monthly payment that she will have to make to retire the loan in 48 months is *closest to*:

A. \$286

B. \$234

C. \$352

Answer: C

Loan amount = \$24,000 × (1 – 0.4) = \$14,400

N = 48; I/Y = 8/12; PV = \$14,400; CPT PMT; PMT → −\$351.546

44. William is evaluating the following options for investing \$10,000 for 5 years:

Investment A: Offers a 10% interest rate compounded monthly.

Investment B: Offers a 12% interest rate compounded semi-annually.

Investment C: Offers an 11% interest rate compounded quarterly.

Which of the following statements is *most accurate*?

A. Investment A offers \$1,455 less than Investment B.

B. Investment C offers a \$704 greater return than Investment B.

C. Investment A offers a \$751 greater return than Investment C.

Answer: A

Investment A:

N = 5 × 12; I/Y = 10/12; PV = −\$10,000; CPT FV; FV → \$16,453.09

Investment B:

N = 5 × 2; I/Y = 12/2; PV = −\$10,000; CPT FV; FV → \$17,908.48

Investment C:

N = 5 × 4; I/Y = 11/4; PV = −\$10,000; CPT FV; FV → \$17,204.28

45. Given a discount rate of 11%, which of the following cash flow streams has the *highest* present value?

A. 12 equal payments of \$600 beginning at the end of Year 1.

B. 10 equal payments of $600 beginning immediately.

C. 12 equal payments of $550 beginning immediately.

Answer: C

N = 12; I/Y = 11; PMT = −$600; CPT PV; PV → $3,895.414

Set the calculator to BGN mode.

N = 10; I/Y = 11; PMT = −$600; CPT PV; PV → $3,922.23

N = 12; I/Y = 11; PMT = −$550; CPT PV; PV → $3,963.58

Reading 6: Discounted Cash Flow Applications

1. How does a higher opportunity cost of capital affect the PV of a project's expected inflows and its NPV?

	PV of Inflows	NPV of Project
A.	Increases	Decreases
B.	Decreases	Decreases
C.	Increases	Increases

2. Faced with projects that are mutually exclusive, a company should undertake the project with the:

   A. Highest positive IRR when the recommendations of the NPV and IRR rules conflict.

   B. Highest positive NPV when the recommendations of the NPV and IRR rules conflict.

   C. Lowest positive NPV when the recommendations of the NPV and IRR rules conflict.

3. Which of the following statements regarding the IRR rule is *least likely*?

   A. IRR equals the discount rate at which NPV = 0.

   B. IRR equates the PV of a project's cash outflows to the PV of its cash inflows.

   C. The IRR relies on externally generated market data.

4. Which of the following measures of return *most likely* represents the IRR of an investment?

   A. Money-weighted rate of return

   B. Time-weighted rate of return

   C. Holding period return

5. The IRR and NPV rules will *least likely* offer different recommendations for which of the following?

   A. When the size of the projects differs.

   B. When the timing of the projects' cash flows is different.

   C. When the projects are independent.

6. Which of the following is *most likely* an assumption of the IRR?

   A. Interim cash flows are reinvested at the risk-free rate.

   B. Interim cash flows are reinvested at the IRR.

   C. Interim cash flows are reinvested at the cost of capital.

7. Which of the following is *most likely* an assumption of the NPV?

   A. Interim cash flows are reinvested at the risk-free rate.

   B. Interim cash flows are reinvested at the IRR.

   C. Interim cash flows are reinvested at the cost of capital.

8. All of the following statements about NPV are correct except:

   A. Positive NPV projects increase shareholder wealth.

   B. Negative NPV projects decrease shareholder wealth.

   C. When two projects are independent, the project with the higher positive NPV should be accepted.

9. Which of the following statements is *most likely*?

   A. For a single project, IRR and NPV give the same recommendation.

   B. For an independent project, when IRR is less than the cost of capital, NPV is positive.

   C. For an independent project, when IRR is greater than the risk-free rate, NPV is positive.

10. The bank discount yield is not a meaningful measure of the return realized by an investor because:

    A. It is based on the face value of the bond.

    B. It annualizes the return over a 365-day year.

C. It assumes compound interest.

11. If the investor (client) has complete control over contributions and withdrawals of funds to and from the portfolio, the most appropriate measure of portfolio return is:

    A. Time-weighted ROR

    B. Money-weighted ROR

    C. Holding period ROR

12. Company X has committed to investing $2,000,000 in a project with expected cash flows of $500,000 at the end of every year for the next 5 years. The appropriate discount rate is 12%. The NPV and IRR of the project are *closest to*:

	NPV	IRR
A.	(197,612)	7%
B.	(197,612)	8%
C.	(142,612)	8%

13. An investor's trades in a stock over a period of 2 years are given below:

    Purchased 10 shares on July 1, 2007 for $50/share.

    Purchased another 5 shares of the same stock on July 1, 2008 for $100/share.

    Sold all shares on July 1, 2009 at $90/share.

    Assuming that the stock doesn't pay any dividends, her money-weighted and time-weighted rates of return are *closest to*:

	Money-Weighted ROR	Time-Weighted ROR
A.	23.23%	34.16%
B.	21.75%	34.16%
C.	23.23%	48.32%

14. An investor purchased 100 shares of Company X at $60/share. A year later she bought 50 more shares of the company at a price of $70/share. She also received a $5/share dividend at the end of Year 1.

At the end of Year 2 she sold all her shares for $75/share. No dividends were paid for Year 2. Her money-weighted ROR and time-weighted ROR are *closest to*:

	Money-Weighted ROR	Time-Weighted ROR
A.	14.19%	14.23%
B.	13.73%	14.23%
C.	14.19%	15.72%

15. A T-Bill with the face value of $100,000 and 90 days until maturity is selling for $99,000. Its BDY, MMY, and EAY are *closest to*:

	BDY	MMY	EAY
A.	4%	4.4%	4.16%
B.	4.5%	4.04%	4.4%
C.	4%	4.04%	4.16%

16. The holding period yield on a T-bill is 1.5% for a period of 60 days. Its EAY and BEY are *closest to*:

	EAY	BEY
A.	9.34%	9.26%
B.	9.34%	9.14%
C.	9.48%	9.26%

17. What is the HPY and BDY for a T-Bill priced at $980 with a par value of $1,000 and 120 days remaining till maturity?

	HPY	BDY
A.	2.00%	6.00%
B.	2.04%	6.21%
C.	2.04%	6.00%

18. If the BDY of a T-Bill with 150 days to maturity is 5%, its MMY is *closest to*:

A. 5.256%

B. 5.106%

C. 5.172%

19. Which of the following statements regarding NPV decision rules is *most accurate*?

    A. Projects with an NPV > 0 should be accepted because positive NPV projects will decrease shareholder wealth.

    B. Projects with an NPV < 0 should be rejected because negative NPV projects will increase shareholder wealth.

    C. If two projects are mutually exclusive, the project with the highest positive NPV should be selected.

20. For mutually exclusive projects, the NPV and IRR methods may offer conflicting results. This is *least likely* to happen in which of the following scenarios?

    A. When the projects' initial cash outlays are different and the timing of cash flows across projects is the same.

    B. When the projects' initial cash outlays are the same and the timing of cash flows across projects is different.

    C. When the projects' initial cash outlays are the same and the timing of cash flows across projects is the same.

21. A company decides to invest in a project that requires an initial investment of \$625,000. The project will generate cash flows of \$300,000 in the first year, \$250,000 in the second year, \$100,000 in the third year, and \$50,000 in the fourth year. Given a discount rate of 5%, the NPV of this project is *closest to*:

    A. -\$14,991

    B. -\$67,280

    C. \$14,991

22. A company is considering an investment which requires an initial outlay of \$17 million. The project is expected to generate the following cash flows over the next 4 years:

Year 1	\$5 million

Year 2	$7.75 million
Year 3	$11.5 million
Year 4	$16 million

Given that the discount rate is 11%, the IRR of the project is *closest to*:

A. 24.8%

B. 36.35%

C. 11.3%

23. Project A requires an initial investment of $15,000. It has an NPV of $2,356 and an IRR equal to 33.3%.

    Project B requires an initial outlay of $17,000. Its NPV equals $3,333 and the IRR is equal to 31.9%.

    Given that the company's required rate of return is 11.5% and the projects are independent the company will *most likely*:

    A. Accept Project A only

    B. Accept Project B only

    C. Accept both projects

24. Project A requires an initial investment of $33,000. It has an expected NPV of $6,195 and an IRR equal to 55.9%.

    Project B requires an initial outlay of $33,000. Its expected NPV equals $11,595 and the IRR is 49.9%.

    Given that the company's cost of capital equals 11.5% and that the projects are mutually exclusive the company should *most likely*:

    A. Reject Project A only

    B. Reject Project B only

    C. Accept both projects

25. A company is interested in purchasing a new piece of machinery at an initial cost of $10,000. The machine is expected to generate cash flows of $3,000 every year forever. Given a discount rate of 15%, the NPV of the investment is *closest to*:

A. $20,000

B. $10,000

C. $11,385

26. A project has an IRR of 11.9% and an NPV of $2,355. The initial investment required is $2,900. If the cost of capital is 11%, the investor should accept the project on the basis of:

    A. NPV, but not IRR

    B. IRR, but not NPV

    C. Both NPV and IRR

27. A T-bill selling for $9,500 has a face value of $10,000 and 135 days remaining till maturity. Its bank discount yield is *closest to*:

    A. 1.87%

    B. 5%

    C. 13.33%

28. An investor purchases a stock for $50 at the beginning of the year and sells the stock after 1 year for $57. The stock also paid a year-end dividend of $1.70. The holding period return over the year is *closest to*:

    A. 17.4%

    B. 14%

    C. 10.6%

29. An investor purchases a share for $11 at the beginning of the year. At the end of Year 1, the stock pays a dividend of $0.75. At the beginning of the second year, the investor purchases another share of the same company for $10. At the end of the second year, the investor sells both the shares for $12 each after receiving a $1 per share dividend. The money-weighted rate of return and the time-weighted rate of return are *closest to*:

	Money-Weighted Rate of Return	**Time-Weighted Rate of Return**
A.	101.43%	12.7%

B.	27.4%	13.3%
C.	17.3%	12.7%

30. The bank discount yield for a T-bill is 9.7%. If the T-bill has 265 days remaining till maturity its money-market yield is *closest to*:

    A. 7.04%

    B. 10.45%

    C. 13.36%

31. A T-bill has a face value of $1,000 and 20 days remaining till maturity. If it is currently selling for $987, its money-market yield is *closest to*:

    A. 1.301%

    B. 0.971%

    C. 23.7%

32. The bond equivalent yield on an investment if the effective annual yield is 6% is *closest to*:

    A. 5.9%

    B. 4.3%

    C. 3%

33. A T-bill is currently selling for $97,000 and has a face value of $100,000. The effective annual yield if the bond has 300 days remaining till maturity is *closest to*:

    A. 3.78%

    B. 3.1%

    C. 2.58%

34. Which of the following statements is *most accurate*?

    A. The effective annual yield is the annualized holding period yield based on a 360-day year.

    B. The effective annual yield is the unannualized holding period yield based on a 365-day year.

    C. The money market yield is the annualized holding period yield based on a 360-day year.

Reading 6: Discounted Cash Flow Applications

1. How does a higher opportunity cost of capital affect the PV of a project's expected inflows and its NPV?

	PV of Inflows	NPV of Project
A.	Increases	Decreases
B.	Decreases	Decreases
C.	Increases	Increases

Answer: B

With a higher opportunity cost of capital, the PV of expected future inflows and the NPV of the project both decrease.

2. Faced with projects that are mutually exclusive, a company should undertake the project with the:

A. Highest positive IRR when the recommendations of the NPV and IRR rules conflict.

B. Highest positive NPV when the recommendations of the NPV and IRR rules conflict.

C. Lowest positive NPV when the recommendations of the NPV and IRR rules conflict.

Answer: B

When choosing between mutually exclusive projects a company should choose the project with the highest positive NPV in order to maximize shareholder wealth.

3. Which of the following statements regarding the IRR rule is *least likely*?

A. IRR equals the discount rate at which NPV = 0.

B. IRR equates the PV of a project's cash outflows to the PV of its cash inflows.

C. The IRR relies on externally generated market data.

Answer: C

Unlike the NPV, the IRR does not require externally generated market data to compute the discount rate.

4. Which of the following measures of return *most likely* represents the IRR of an investment?

   A. Money-weighted rate of return

   B. Time-weighted rate of return

   C. Holding period return

   Answer: A

   The money-weighted rate of return equals the IRR of an investment's cash flow stream.

5. The IRR and NPV rules will *least likely* offer different recommendations for which of the following?

   A. When the size of the projects differs.

   B. When the timing of the projects' cash flows is different.

   C. When the projects are independent.

   Answer: C

   When projects are independent, NPV and IRR always offer the same recommendation. However, when the projects are of different size, or when the timing of the projects' cash flows is different, they might offer different recommendations.

6. Which of the following is *most likely* an assumption of the IRR?

   A. Interim cash flows are reinvested at the risk-free rate.

   B. Interim cash flows are reinvested at the IRR.

   C. Interim cash flows are reinvested at the cost of capital.

   Answer: B

   IRR assumes that interim cash flows from the project are reinvested at the IRR.

7. Which of the following is *most likely* an assumption of the NPV?
   A. Interim cash flows are reinvested at the risk-free rate.
   B. Interim cash flows are reinvested at the IRR.
   C. Interim cash flows are reinvested at the cost of capital.

   Answer: C

   NPV assumes that interim cash flows from the project are reinvested at the cost of capital.

8. All of the following statements about NPV are correct except:
   A. Positive NPV projects increase shareholder wealth.
   B. Negative NPV projects decrease shareholder wealth.
   C. When two projects are independent, the project with the higher positive NPV should be accepted.

   Answer: C

   When projects are independent, all projects with positive NPVs should be accepted. Only when faced with mutually exclusive projects should the company choose the one with the higher positive NPV.

9. Which of the following statements is *most likely*?
   A. For a single project, IRR and NPV give the same recommendation.
   B. For an independent project, when IRR is less than the cost of capital, NPV is positive.
   C. For an independent project, when IRR is greater than the risk-free rate, NPV is positive.

   Answer: A

   For a single project, IRR and NPV will always give the same recommendation. If the IRR is **greater** than cost of capital, NPV is positive.

10. The bank discount yield is not a meaningful measure of the return realized by an investor because:
    A. It is based on the face value of the bond.

B. It annualizes the return over a 365-day year.

C. It assumes compound interest.

Answer: A

The bank discount yield is not a meaningful measure of the return realized by an investor because it assumes simple interest, is based on the par or face value, and annualizes the return over a 360-day year.

11. If the investor (client) has complete control over contributions and withdrawals of funds to and from the portfolio, the most appropriate measure of portfolio return is:

A. Time-weighted ROR

B. Money-weighted ROR

C. Holding period ROR

Answer: A

If the investor has complete control over the flow of funds into and out of her investment account, the time-weighted ROR would be the most appropriate performance measure.

12. Company X has committed to investing $2,000,000 in a project with expected cash flows of $500,000 at the end of every year for the next 5 years. The appropriate discount rate is 12%. The NPV and IRR of the project are *closest to*:

	NPV	**IRR**
A.	(197,612)	7%
B.	(197,612)	8%
C.	(142,612)	8%

Answer: B

Calculator keystrokes for the BA II Plus:

For NPV

[CF]	Enters the Cash Flow function.

[2ND][CE|C]	To clear the cash flow memory registers, and then enter the values given.
[2,000,000] [+/−]	Value for CF0. Negative sign because this is an outflow
[ENTER]	
[↓][500,000] [ENTER]	Value for C01. This is an inflow.
[↓][5] [ENTER]	Value for F01 or the frequency of the cash flow. Because the same inflow is received 5 times.
[NPV][12] [ENTER]	Value for I, the interest rate.
[↓][CPT]	To calculate the NPV.

NPV = −197,612

For IRR after computing NPV, press

[IRR][CPT] To calculate IRR from the same data used for the NPV calculation.

IRR = 7.93% or approximately 8%

13. An investor's trades in a stock over a period of 2 years are given below:

Purchased 10 shares on July 1, 2007 for $50/share.

Purchased another 5 shares of the same stock on July 1, 2008 for $100/share.

Sold all shares on July 1, 2009 at $90/share.

Assuming that the stock doesn't pay any dividends, her money-weighted and time-weighted rates of return are *closest to*:

	Money-Weighted ROR	**Time-Weighted ROR**
A.	23.23%	34.16%
B.	21.75%	34.16%
C.	23.23%	48.32%

Answer: B

Time weighted ROR

Holding Period 1

July 1, 2007 beginning value = (10)($50)= $500

July 1, 2008 ending value = (10)($100) = $1,000

$$HPR = \frac{(\text{Ending value} + \text{dividends} - \text{beginning value})(100)}{\text{beginning value}}$$

$$HPR1 = \frac{(1,000 - 500)(100)}{500} = 100\ \%$$

Holding Period 2

July 1, 2008 beginning value = (15)($100)= $1,500

July 1, 2009 ending value = (15)($90) = $1,350

$$HPR2 = \frac{(1,500 - 1,350)(100)}{1,500} = -10\ \%$$

Time weighted ROR = $[(1+HPR1)(1+HPR2)]^{0.5} - 1 = [(1+1)(1+(-0.1))]^{0.5} - 1 = 0.3416$ or 34.16%

The money-weighted ROR is simply the IRR of the cash flow stream. Calculator keystrokes for the BA II Plus for IRR:

[CF]	Enters the cash flow function.
[2ND][CE|C]	To clear the cash flow memory registers.
[500][−][ENTER]	Value for CF0. Negative sign because this is an outflow.
[↓][500][+/−] [ENTER]	Value for C01. This is also an outflow.
[↓][↓][1,350] [ENTER]	Value for C02. This is an inflow.
[IRR][CPT]	To calculate the IRR.

IRR = 21.75%

14. An investor purchased 100 shares of Company X at $60/share. A year

later she bought 50 more shares of the company at a price of \$70/share. She also received a \$5/share dividend at the end of Year 1. At the end of Year 2 she sold all her shares for \$75/share. No dividends were paid for Year 2. Her money-weighted ROR and time-weighted ROR are *closest to*:

	Money-Weighted ROR	**Time-Weighted ROR**
A.	14.19%	14.23%
B.	13.73%	14.23%
C.	14.19%	15.72%

Answer: C

Time-weighted ROR

Holding Period 1

Year 1 beginning value (at t = 0) = (100)(\$60)= \$6,000

Year 1 ending value (at t = 1) = (100)(\$70) = \$7,000

Year 1 dividends (at t = 1) = (100)(\$5) = \$500

$$\text{HPR} = \frac{(\text{Ending value} + \text{dividends} - \text{beginning value})(100)}{\text{beginning value}}$$

$$\text{HPR1} = \frac{(7,000 + 500 - 6,000)(100)}{6,000} = 25\ \%$$

Holding Period 2

Year 2 beginning value (at t = 1) = (150)(\$70)= \$10,500

Year 2 ending value (at t = 2) = (150)(\$75) = \$11,250

$$\text{HPR2} = \frac{(11,250 - 10,500)(100)}{10,500} = -7.14\ \%$$

Time-weighted ROR = $[(1+\text{HPR1})(1+\text{HPR2})]^{0.5} - 1 = [(1+0.25)(1+0.0714)]^{0.5} - 1 = 0.1572$ or 15.72%

The money-weighted ROR is simply the IRR of the investment.

Calculator keystrokes for the BA II Plus for IRR:

[CF]	Enters the cash flow function.
[2ND] [CE|C]	To clear the cash flow memory registers.
[6,000][+/−] [ENTER]	Value for CF0. Negative sign because this is an outflow.
[↓][3,000] [+/−] [ENTER]	Value for C01. This is net outflow. An inflow of 500 as dividend and an outflow of $3,500 for the purchase of new shares.
[↓][↓] [11,250] [ENTER]	Value for C02. This is an inflow (proceeds from sale).
[IRR] [CPT]	To calculate the IRR.

IRR = 14.19%

15. A T-Bill with the face value of $100,000 and 90 days until maturity is selling for $99,000. Its BDY, MMY, and EAY are *closest to:*

	BDY	MMY	EAY
A.	4%	4.4%	4.16%
B.	4.5%	4.04%	4.4%
C.	4%	4.04%	4.16%

Answer: C

The Bank Discount Yield is calculated as:

$$r_{BD} = \frac{D}{F} \times \frac{360}{t} = \frac{(100,000 - 99,000)}{100,000} \times \frac{360}{90} = 4.00\ \%$$

For the Money Market Yield and the Equalent Annual Yield we need to first calculate the Holding Period Yield:

$$(100,000 - 99,000)$$

$$HPY = \frac{(100,000 - 99,000)}{100,000} \times 100 = 1.01\ \%$$

The MMY is the HPY annualized over a 360-day year assuming simple interest, while the EAY is the HPY annualized over a 365-day year assuming compound interest.

$$MMY = 1.01\ \% \times \frac{360}{90} = 4.04\ \%$$

$$EAY = (1 + 0.0101)^{(365/90)} - 1 = 0.0416 \text{ or } 4.16\ \%$$

16. The holding period yield on a T-bill is 1.5% for a period of 60 days. Its EAY and BEY are *closest to*:

	EAY	BEY
A.	9.34%	9.26%
B.	9.34%	9.14%
C.	9.48%	9.26%

Answer: C

Given that the HPY is 1.5%, the EAY and BEY are calculated as:

$EAY = (1+ 0.015)^{(365/60)} -1 = 0.0948$ or 9.48%

The BEY is the semiannual rate times 2. We can use the EAY calculated above to compute the semiannual rate.

$BEY = [(1 + EAY)^{(0.5)} -1](2) = 0.0926$ or 9.26%

17. What is the HPY and BDY for a T-Bill priced at $980 with a par value of $1,000 and 120 days remaining till maturity?

	HPY	BDY
A.	2.00%	6.00%
B.	2.04%	6.21%
C.	2.04%	6.00%

Answer: C

$$r_{BD} = \frac{D}{F} \times \frac{360}{t} = \frac{(1,000 - 980)}{1,000} \times \frac{360}{120} = 6.00\ \%$$

$$HPY - \frac{(1,000 - 980)}{980} \times 100 = 2.04\ \%$$

18. If the BDY of a T-Bill with 150 days to maturity is 5%, its MMY is *closest to*:

A. 5.256%

B. 5.106%

C. 5.172%

Answer: B

The equation for the conversion between BDY and MMY is:

$$MMY = \frac{360 \times r_{BD}}{360 - (t \times t_{BD})}$$

$$MMY = \frac{(360)(0.05)}{360 - ((150)(0.05))} = 0.05106 \text{ or } 5.106\ \%$$

Alternatively the MMY can also be calculated by first calculating the HPY from the BDY.

$$r_{BD} = \frac{D}{F} \times \frac{360}{t}$$

Re-arranging this equation to find "D":

$$D = \frac{(BDY)(F)(t)}{360} = \frac{(0.05)(1,000)(150)}{360} = \$20.83$$

If the discount is $20.83 then the purchase price of the T-bill will be ($1,000 – $20.83 = $979.17) We can now calculate the HPY as:

$$HPY = \frac{20.83}{979.17} = 0.0212 \text{ or } 2.12\ \%$$

And the MMY as:

2.12%(360 / 150) = 5.106%

19. Which of the following statements regarding NPV decision rules is *most accurate*?

    A. Projects with an NPV > 0 should be accepted because positive NPV projects will decrease shareholder wealth.

    B. Projects with an NPV < 0 should be rejected because negative NPV projects will increase shareholder wealth.

    C. If two projects are mutually exclusive, the project with the highest positive NPV should be selected.

    Answer: C

    Projects with a positive NPV should be accepted as they increase shareholder wealth. Projects with a negative NPV should be rejected as they decrease shareholder wealth.

20. For mutually exclusive projects, the NPV and IRR methods may offer conflicting results. This is *least likely* to happen in which of the following scenarios?

    A. When the projects' initial cash outlays are different and the timing of cash flows across projects is the same.

    B. When the projects' initial cash outlays are the same and the timing of cash flows across projects is different.

    C. When the projects' initial cash outlays are the same and the timing of cash flows across projects is the same.

    Answer: C

    The IRR and NPV decision rules may offer conflicting results when the initial cash outlays are significantly different or when the timing of cash flows differs.

21. A company decides to invest in a project that requires an initial investment of $625,000. The project will generate cash flows of $300,000 in the first year, $250,000 in the second year, $100,000 in the third year, and $50,000 in the fourth year. Given a discount rate of 5%, the NPV of this project is *closest to*:

    A. −$14,991

    B. −$67,280

C. $14,991

Answer: C

[CF] [2nd] [FV] [2nd] [CE|C]

625,000 [+|−] [ENTER] [↓]

300,000 [ENTER] [↓] [↓]

250,000 [ENTER] [↓] [↓]

100,000 [ENTER] [↓] [↓]

50,000 [ENTER]

[NPV] 5 [ENTER] [↓] [CPT]

NPV = 14,990.54

22. A company is considering an investment which requires an initial outlay of $17 million. The project is expected to generate the following cash flows over the next 4 years:

Year 1	$5 million
Year 2	$7.75 million
Year 3	$11.5 million
Year 4	$16 million

Given that the discount rate is 11%, the IRR of the project is *closest to*:

A. 24.8%

B. 36.35%

C. 11.3%

Answer: B

[CF] [2nd] [FV] [2nd] [CE|C]

17 [+|−] [ENTER] [↓]

5 [ENTER] [↓] [↓]

7.75 [ENTER] [↓] [↓]

11.5 [ENTER] [↓] [↓]

16 [ENTER]

[IRR] [CPT]

IRR = 36.35%

23. Project A requires an initial investment of $15,000. It has an NPV of $2,356 and an IRR equal to 33.3%.

    Project B requires an initial outlay of $17,000. Its NPV equals $3,333 and the IRR is equal to 31.9%.

    Given that the company's required rate of return is 11.5% and the projects are independent the company will *most likely*:

    A. Accept Project A only

    B. Accept Project B only

    C. Accept both projects

    Answer: C

    Both projects have a positive NPV and an IRR greater than the company's required rate of return. Since, they are independent projects, both of them should be chosen as they are expected to increase shareholder wealth.

24. Project A requires an initial investment of $33,000. It has an expected NPV of $6,195 and an IRR equal to 55.9%.

    Project B requires an initial outlay of $33,000. Its expected NPV equals $11,595 and the IRR is 49.9%.

    Given that the company's cost of capital equals 11.5% and that the projects are mutually exclusive the company should *most likely*:

    A. Reject Project A only

    B. Reject Project B only

    C. Accept both projects

    Answer: A

    With mutually exclusive projects, the company will only select the project with the highest positive NPV.

25. A company is interested in purchasing a new piece of machinery at an

initial cost of $10,000. The machine is expected to generate cash flows of $3,000 every year forever. Given a discount rate of 15%, the NPV of the investment is *closest to*:

A. $20,000

B. $10,000

C. $11,385

Answer: B

NPV = −10,000 + (3,000 / 0.15) = $10,000

26. A project has an IRR of 11.9% and an NPV of $2,355. The initial investment required is $2,900. If the cost of capital is 11%, the investor should accept the project on the basis of:

A. NPV, but not IRR

B. IRR, but not NPV

C. Both NPV and IRR

Answer: C

The NPV is positive and IRR is greater than the required rate of return.

27. A T-bill selling for $9,500 has a face value of $10,000 and 135 days remaining till maturity. Its bank discount yield is *closest to*:

A. 1.87%

B. 5%

C. 13.33%

Answer: C

Bank discount yield = ($500/$10,000) × (360/135) = 13.33%.

28. An investor purchases a stock for $50 at the beginning of the year and sells the stock after 1 year for $57. The stock also paid a year-end dividend of $1.70. The holding period return over the year is *closest to*:

A. 17.4%

B. 14%

C. 10.6%

Answer: A

HPY = [(P1 – P0) + D1] / P0 = [(57–50) + 1.7] / 50 = 0.174 or 17.4%

29. An investor purchases a share for $11 at the beginning of the year. At the end of Year 1, the stock pays a dividend of $0.75. At the beginning of the second year, the investor purchases another share of the same company for $10. At the end of the second year, the investor sells both the shares for $12 each after receiving a $1 per share dividend. The money-weighted rate of return and the time-weighted rate of return are *closest to*:

	Money-Weighted Rate of Return	**Time-Weighted Rate of Return**
A.	101.43%	12.7%
B.	27.4%	13.3%
C.	17.3%	12.7%

Answer: C

Money-weighted rate of return equals the IRR of the cash flow stream.

CF0 = −$11; CF1 = 0.75 − 10 = −$9.25; CF2 = 12 + 12 + 1 + 1 = $26

[CF] [2^{ND}] [FV] [2^{ND}] [CE|C]

11 [+|−] [ENTER] [↓]

9.25 [+|−] [ENTER] [↓] [↓]

26 [ENTER]

[IRR] [CPT]

IRR = 17.34%

Time-weighted rate of return:

Year 1 HPY = (10.75/11) − 1 = −2.273%.

Year 2 HPY = (26/20) − 1 = 30%.

Time-weighted rate of return = $[(0.97727) \times (1.3)]^{0.5} - 1$ = 12.71%.

30. The bank discount yield for a T-bill is 9.7%. If the T-bill has 265 days remaining till maturity its money-market yield is *closest to*:

A. 7.04%

B. 10.45%

C. 13.36%

Answer: B

$R_{MM} = (360 \times r_{BD}) / [360 - (t \times r_{BD})]$.

Therefore, $(360 \times 0.097) / [360 - (265 \times 0.097)] = 10.45\%$.

31. A T-bill has a face value of $1,000 and 20 days remaining till maturity. If it is currently selling for $987, its money-market yield is *closest to*:

A. 1.301%

B. 0.971%

C. 23.7%

Answer: C

$R_{MM} = HPY \times (360/t)$

$HPY = (13/987) = 1.317\%$

$1.317\% \times (360/20) = 23.7\%$.

32. The bond equivalent yield on an investment if the effective annual yield is 6% is *closest to*:

A. 5.9%

B. 4.3%

C. 3%

Answer: A

$BEY = [(1 + EAY)^{0.5} - 1] \times 2 = [(1 + 0.06)^{0.5} - 1] \times 2 = 5.9\%$.

33. A T-bill is currently selling for $97,000 and has a face value of $100,000. The effective annual yield if the bond has 300 days remaining till maturity is *closest to*:

A. 3.78%

B. 3.1%

C. 2.58%

Answer: A

$EAY = (1 + HPY)^{365/t} - 1$

$HPY = (3{,}000/97{,}000) \times 100 = 3.09\%$

$EAY = (1 + 0.0309)^{365/t} - 1 = 3.78\%$

34. Which of the following statements is *most accurate*?

    A. The effective annual yield is the annualized holding period yield based on a 360-day year.

    B. The effective annual yield is the unannualized holding period yield based on a 365-day year.

    C. The money market yield is the annualized holding period yield based on a 360-day year.

Answer: C

The effective annual yield is the **annualized** holding period yield based on a **365-day** year.

Reading 7: Statistical Concepts and Market Returns

1. The branch of statistics that summarizes the important characteristics of large data sets is known as:
   A. Inferential statistics.
   B. Descriptive statistics.
   C. Quantitative statistics.
2. A parameter is defined as:
   A. All members of a special group.
   B. A descriptive measure of a population characteristic.
   C. A subset of a population.
3. Which of the following measurement scales should *most likely* be used to measure cash dividends per share?
   A. Nominal scale.
   B. Ordinal scale.
   C. Ratio scale.
4. The actual number of observations in a given interval is known as:
   A. Absolute frequency.
   B. Relative frequency.
   C. Cumulative frequency.
5. An analyst gathered the following information about the required rate of return of different stocks held in a portfolio:

Interval	Req. ROR	Absolute Frequency
1	5%–6%	1
2	6%–7%	3
3	7%–8%	4

4	8%–9%	2
5	9%–10%	3

The relative frequency & cumulative relative frequency of Interval 4 are *closest to*:

	Relative Frequency	Cumulative Relative Frequency
A.	15%	23%
B.	20%	77%
C.	15%	77%

6. If a sample consists of the historical monthly stock returns of Trukmaker Inc. for the past 5 years, then the mean computed from these observations will be a:

   A. Time-series mean

   B. Cross-sectional mean

   C. Weighted mean

7. A portfolio consists of 40% common stock, 20% preferred stock, 15% bonds, and 25% real estate. The returns on these asset classes are 12% on common stock, 10% on preferred stock, and 8% on both real estate and bonds. The mean return on the portfolio is *closest to*:

   A. 8%

   B. 10%

   C. 12%

8. An individual invests $1,000 in a particular security on two different dates ($2,000 total). The price of the security is $10 on the first day and $12 on the second. The investor's average purchase price is *closest to*:

   A. 11

   B. 10.84

   C. 10.91

9. The 4th quintile for the following distribution of returns is *closest to*:

8%, 6%, 12%, 18%, 25%, 8%, 9%, 17%, 14%, 10%

A. 17%

B. 17.8%

C. 18.5%

10. Which of the following portfolios has the smaller range and which one *most likely* has greater risk?

Portfolio A	Portfolio B
16.2%	9.2%
20.5%	8.4%
−11.1%	−1.6%
7.2%	13.2%

	Smaller Range	Higher Risk
A.	A	B
B.	B	A
C.	B	B

11. What is the mean absolute deviation and variance of the sample investment returns given below:

Year	Return
2004	8%
2005	9%
2006	−7%
2007	5%

	MAD	Variance
A.	6.375%	40.69
B.	5.375%	54.25
C.	6.375%	54.25

12. What is the minimum percentage of a distribution that will lie within 3

standard deviations of the mean?

A. 75%

B. 82%

C. 89%

13. An analyst gathered the following information about a common stock portfolio:

Arithmetic mean	12%
Geometric mean	12%
Harmonic mean	11.5%
Variance of returns	270
Portfolio Beta	1.25
Risk-free ROR	5%

Compute the coefficient of variation and Sharpe ratio.

	Coefficient of Variation	**Sharpe Ratio**
A.	1.26	0.43
B.	1.26	2.05
C.	1.37	0.43

14. Compared to the standard deviation, the mean absolute deviation is always:

A. Less than or equal to the standard deviation

B. Greater than or equal to the standard deviation

C. Less than the standard deviation

15. A distribution that has a kurtosis of +3 is known as:

A. Kurtosis

B. Leptokurtic

C. Mesokurtic

16. Excess kurtosis of normal distribution equals:

A. 3

B. 2

C. 0

Use the following frequency distribution for Questions 17 to 19:

Annual Return (R)	Frequency
$-30\% \le R < -20\%$	1
$-20\% \le R < -10\%$	4
$-10\% \le R < 0\%$	15
$0\% \le R < 10\%$	10
$10\% \le R < 20\%$	14
$20\% \le R < 30\%$	2

17. The modal interval is:

    A. $-10\% \le R < 0\%$

    B. -5

    C. $-30\% \le R < -20\%$

18. The sample size is:

    A. 7

    B. 46

    C. 45

19. The cumulative relative frequency of the fifth interval is:

    A. 44

    B. 0.956

    C. 0.304

Use the following information for Questions 20 to 23:

The annual returns of the various stocks for 2008 are given in the table below:

Stock	ABC	DEF	GHI	JKL	MNO	PQR

Return	21%	−10%	5%	13%	−19%	5%

20. The arithmetic mean of the returns on these stocks for the year 2008 is:

    A. 12.17%

    B. 2.5%

    C. 5%

21. The median return of these stocks for the year 2008 is:

    A. 9%

    B. −19%

    C. 5%

22. The range and standard deviation of the stock returns, assuming that they represent a population, are:

	Range	**Std Dev**
A.	40	32.9
B.	40	13.43
C.	28.16	40

23. The geometric and harmonic means for the returns data are:

	G-Mean	**H-Mean**
A.	10.4%	2.5%
B.	1.6%	16.1%
C.	1.02%	8.86%

24. Which of the following statements is *most accurate*?

    A. Descriptive statistics refer to methods used to make forecasts, estimates, or draw conclusions about a larger data set based on a smaller representative set.

    B. Inferential statistics refer to how large volumes of data are converted into useful and readily understood information by summarizing their important characteristics.

C. The arithmetic mean of a particular data set is an example of a sample statistic.

25. Which of the following types of measurement scales sorts data into categories that are ranked according to a certain characteristic, but does not tell us anything about the differences between categories?

A. Nominal scales

B. Ordinal scales

C. Interval scales

26. Which of the following statements regarding frequency distributions is *least accurate*?

A. Any particular observation could fall into one or more intervals.

B. The set of intervals should include the entire range of values in the data set.

C. The interval with the highest frequency is called the modal class.

27. Which of the following statements is *most likely*?

A. The cumulative frequency for an interval is the proportion of total observations that lies in that particular interval.

B. The cumulative absolute frequency for a particular interval is the number of observations that are less than the upper bound for the interval.

C. The cumulative relative frequency for a particular interval is the number of observations that are less than the midpoint of the interval.

Use the following information to answer Questions 28 to 35:

Cool Pop Soda Corp's annual profit margins since its incorporation are presented below:

Year 1	11%
Year 2	9%
Year 3	4%
Year 4	−2%

Year 5	1%
Year 6	4%

28. The arithmetic mean for Cool Pop Soda Corp's profit margins over the years is *closest to*:

    A. 4.5%

    B. 6%

    C. 11%

29. The median for Cool Pop Soda Corp's profit margins over the years is *closest to*:

    A. 11%

    B. 4.5%

    C. 4%

30. The mode for Cool Pop Soda Corp's profit margins over the years is *closest to*:

    A. 4%

    B. 4.5%

    C. 11%

31. The mean absolute deviation for Cool Pop Soda Corp's profit margins over the years is *closest to*:

    A. 3

    B. 3.67

    C. 19.56

32. The variance for Cool Pop Soda Corp's profit margins over the years is *closest to*:

    A. 3.67

    B. 4.42

    C. 19.58

33. The standard deviation for Cool Pop Soda Corp's profit margins over

the years is *closest to*:

A. 1.91%

B. 4.43%

C. 19.58%

34. Given that the data set is only a representative sample of profit margins over the company's entire existence, the variance for Cool Pop Soda Corp's profit margins over the 6 years is *closest to*:

A. 23.5

B. 19.56

C. 13.47

35. Given that the data set is only a representative sample of profit margins over the company's entire existence, the standard deviation for Cool Pop Soda Corp's profit margins over the 6 years is *closest to*:

A. 3.67%

B. 4.42%

C. 4.85%

36. Junglelala's returns over its first 4 years of operations are −1.1%, 1.1%, 1.9%, and 2.8% respectively. The geometric mean of its returns is *closest to*:

A. 1.165%

B. 1.175%

C. 1.185%

37. The maximum percentage of observations in a data set that lies further than 1.85 standard deviations away from the mean is *closest to*:

A. 29.2%

B. 45.9%

C. 70.8%

38. A distribution of returns that has a median that is greater than its mean is *most likely*:

A. Positively skewed

B. Negatively skewed

C. A symmetric distribution

39. Stock A has an average return of 11% and a standard deviation of 4%. Stock B has an average return of 33% and a standard deviation of 14%. Stock C has an average return of 7% and a standard deviation of 0.33%. Given a risk-free rate of 5%, which investment is *most attractive* based on the coefficient of variation?

A. A

B. C

C. B

40. Portfolio A has a mean return of 11% and a standard deviation of 3%. Portfolio B has a mean return of 17% and a standard deviation of 6%. The risk-free rate of interest is 3%. The respective Sharpe ratios of the two portfolios are *closest to*:

	Portfolio A	**Portfolio B**
A.	2.33	2.67
B.	2.67	2.33
C.	2.33	2.83

41. A leptokurtic distribution *most likely*:

A. Has a negative excess kurtosis and is more peaked and has thinner tails than a normal distribution

B. Has a positive excess kurtosis and is more peaked and has fatter tails than a normal distribution

C. Has a zero excess kurtosis and is less peaked and has fatter tails than a normal distribution

42. The Sharpe ratio *most likely* measures:

A. Total risk per unit of return

B. Downside risk

C. Excess return per unit of risk

43. Which of the following computations uses the sum of cubed deviations from the mean?

    A. Sample standard deviation

    B. Sample skewness

    C. Sample kurtosis

44. The geometric mean return approximately equals:

    A. The arithmetic mean return minus 2 times the standard deviation of returns.

    B. The arithmetic mean return minus half the variance of returns.

    C. The arithmetic mean return plus half the variance of returns.

45. Which of the following data sets suffers from the lowest level of skewness?

    A. One with a sample skewness of −1.5

    B. One with a sample skewness of zero

    C. One with a sample skewness of +1

Reading 7: Statistical Concepts and Market Returns

1. The branch of statistics that summarizes the important characteristics of large data sets is known as:

   A. Inferential statistics.

   B. Descriptive statistics.

   C. Quantitative statistics.

   Answer: B

   Descriptive statistics is the study of how data can be summarized effectively to describe the important aspects of large data sets.

2. A parameter is defined as:

   A. All members of a special group.

   B. A descriptive measure of a population characteristic.

   C. A subset of a population.

   Answer: B

   A parameter is a descriptive measure of a population characteristic.

3. Which of the following measurement scales should *most likely* be used to measure cash dividends per share?

   A. Nominal scale.

   B. Ordinal scale.

   C. Ratio scale.

   Answer: C

   Cash dividends per share can be best measured on a ratio scale. Ratio scales have a true zero point as the origin. For the variable in question, zero represents the absence of dividends.

4. The actual number of observations in a given interval is known as:

   A. Absolute frequency.

   B. Relative frequency.

   C. Cumulative frequency.

   Answer: A

   The actual number of observations in a given interval is called frequency or absolute frequency.

5. An analyst gathered the following information about the required rate of return of different stocks held in a portfolio:

Interval	Req. ROR	Absolute Frequency
1	5%–6%	1
2	6%–7%	3
3	7%–8%	4
4	8%–9%	2
5	9%–10%	3

The relative frequency & cumulative relative frequency of Interval 4 are *closest to*:

	Relative Frequency	Cumulative Relative Frequency
A.	15%	23%
B.	20%	77%
C.	15%	77%

Answer: C

$$\text{Relative frequency} = \frac{\text{Absolute frequency of each interval}}{\text{Total no. of observations}} \times 100 = \frac{2}{13} = 15.38\ \% \ \text{ or } 15\ \%$$

Cumulative relative frequency is the cumulative frequency of 4^{th} interval divided by the total number of observations:

$$\text{CRF} = \frac{1 + 3 + 4 + 2}{13} = \frac{10}{13} = 0.7962 \text{ or } 77\ \%$$

6. If a sample consists of the historical monthly stock returns of Trukmaker Inc. for the past 5 years, then the mean computed from these observations will be a:

   A. Time-series mean

   B. Cross-sectional mean

   C. Weighted mean

   Answer: A

   A firm's returns over a period of time are an example of time-series data. The mean of time-series data is called a time-series mean.

7. A portfolio consists of 40% common stock, 20% preferred stock, 15% bonds, and 25% real estate. The returns on these asset classes are 12% on common stock, 10% on preferred stock, and 8% on both real estate and bonds. The mean return on the portfolio is *closest to*:

   A. 8%

   B. 10%

   C. 12%

   Answer: B

Portfolio return = (0.4)(0.12)+(0.2)(0.1)+(0.15)(0.08)+(0.25)(0.08) = 0.1 or 10%

8. An individual invests $1,000 in a particular security on two different dates ($2,000 total). The price of the security is $10 on the first day and $12 on the second. The investor's average purchase price is *closest to*:

   A. 11

   B. 10.84

   C. 10.91

   Answer: C

$$\text{Harmonic mean} = \frac{2}{\frac{1}{10} + \frac{1}{12}} = 10.909$$

9. The 4^{th} quintile for the following distribution of returns is *closest to*:

   8%, 6%, 12%, 18%, 25%, 8%, 9%, 17%, 14%, 10%

   A. 17%

   B. 17.8%

   C. 18.5%

   Answer: B

   First rearranging the data in ascending order:

   6%, 8%, 8%, 9%, 10%, 12%, 14%, 17%, 18%, 25%

   Quintiles are fifths (1/5) so the 4^{th} quintile is 80% of the observations.

$$\text{Using this formula:} \ L_y = \frac{(n+1)y}{100}$$

$$L_y = (10+1)\frac{80}{100} = 8.8^{th} \ \text{item}$$

   This means that when the data is arranged in ascending order, the 4^{th} quintile is 8^{th} data point from the left plus 0.8 times the distance between the 8^{th} and 9^{th} values:

   = 17 + 0.8(18 – 17)

   = 17.8%

10. Which of the following portfolios has the smaller range and which one *most likely* has greater risk?

Portfolio A	**Portfolio B**
16.2%	9.2%
20.5%	8.4%
−11.1%	−1.6%
7.2%	13.2%

	Smaller Range	Higher Risk
A.	A	B
B.	B	A
C.	B	B

Answer: B

Range of Portfolio A = 20.5% – (−11.1%) = 31.6%

Range of Portfolio B = 13.2% – (−1.6%) = 14.8%

Portfolio B has the smaller range and Portfolio A is riskier as it has a higher range.

11. What is the mean absolute deviation and variance of the sample investment returns given below:

Year	Return
2004	8%
2005	9%
2006	−7%
2007	5%

	MAD	Variance
A.	6.375%	40.69
B.	5.375%	54.25
C.	6.375%	54.25

Answer: B

$$\text{Mean} = \bar{x} = (8\% + 9\% + (-7\%) + 5)/4 = 3.75\%$$
$$\text{MAD} = (|8 - 3.75| + |9 - 3.75| + |-7 - 3.75| + |5 + 3.75|)/4 = 5.375\%$$
$$\text{Variance} = \frac{(8 - 3.75)^2 + (9 - 3.75)^2 + (-7 - 3.75)^2 + (5 - 3.75)^2}{4 - 1} = 54.25$$

12. What is the minimum percentage of a distribution that will lie within 3 standard deviations of the mean?

A. 75%

B. 82%

C. 89%

Answer: C

Applying Chebyshev's inequality $1 - 1/k^2$:

$1 - (1/3^2) = 89\%$

13. An analyst gathered the following information about a common stock portfolio:

Arithmetic mean	12%
Geometric mean	12%
Harmonic mean	11.5%
Variance of returns	270
Portfolio Beta	1.25
Risk-free ROR	5%

Compute the coefficient of variation and Sharpe ratio.

	Coefficient of Variation	**Sharpe Ratio**
A.	1.26	0.43
B.	1.26	2.05
C.	1.37	0.43

Answer: C

$$\text{Coefficient of variation} = CV = \frac{s}{\overline{X}} = \frac{\sqrt{270}}{12} = 1.37$$

$$\text{Sharpe ratio} = \frac{\overline{r}_p - r_f}{s_p} = \frac{12 - 5}{\sqrt{270}} = 0.43$$

14. Compared to the standard deviation, the mean absolute deviation is always:

A. Less than or equal to the standard deviation

B. Greater than or equal to the standard deviation

C. Less than the standard deviation

Answer: A

The MAD is always less than or equal to the standard deviation as the standard deviation attaches a heavier weight to larger deviations.

15. A distribution that has a kurtosis of +3 is known as:

A. Kurtosis

B. Leptokurtic

C. Mesokurtic

Answer: C

A mesokurtic distribution has a kurtosis of 3 and excess kurtosis of zero.

16. Excess kurtosis of normal distribution equals:

A. 3

B. 2

C. 0

Answer: C

While kurtosis for the normal distribution is 3, the excess kurtosis of a normal distribution equals 0.

Use the following frequency distribution for Questions 17 to 19:

Annual Return (R)	Frequency
−30% ≤ R < −20%	1
−20% ≤ R < −10%	4
−10% ≤ R < 0%	15
0% ≤ R < 10%	10
10% ≤ R < 20%	14
20% ≤ R < 30%	2

17. The modal interval is:

A. −10% ≤ R < 0%

B. −5

C. −30% ≤ R < −20%

Answer: A

The modal interval is the interval with the highest frequency, which in this case is (−10% ≤ R < 0%).

18. The sample size is:

A. 7

B. 46

C. 45

Answer: B

The sample size equals the total frequency (1+4+15+10+14+2 = 46).

19. The cumulative relative frequency of the fifth interval is:

A. 44

B. 0.956

C. 0.304

Answer: B

Cumulative relative frequency is the cumulative frequency divided by the total frequency (44/46 = 0.956)

Use the following information for Questions 20 to 23:

The annual returns of the various stocks for 2008 are given in the table below:

Stock	ABC	DEF	GHI	JKL	MNO	PQR
Return	21%	−10%	5%	13%	−19%	5%

20. The arithmetic mean of the returns on these stocks for the year 2008 is:

    A. 12.17%

    B. 2.5%

    C. 5%

    Answer: B

    The arithmetic mean is the sum of the returns divided by the total number of stocks:

    (21−10+5+13−19+5)/6 = 2.5%

21. The median return of these stocks for the year 2008 is:

    A. 9%

    B. −19%

    C. 5%

    Answer: C

    The median is the ½(n+1)th element in the dataset. In this case, it is the 3.5th element, which lies between the 3rd and the 4th items. The average of 5% and 5% equals 5%.

22. The range and standard deviation of the stock returns, assuming that they represent a population, are:

	Range	**Std Dev**
A.	40	32.9
B.	40	13.43
C.	28.16	40

Answer: B

The range is the difference between the highest and lowest value in the dataset [21 – (−19) = 40]. The standard deviation is the average of the square root of the sum of squared deviations from the mean:

$$\text{Std Dv.} = \sigma = \frac{\sqrt{(21-2.5)^2 + (-10-2.5)^2 + (5-2.5)^2 + (-19-2.5)^2 + (5-2.5)^2}}{6} = 13.43$$

23. The geometric and harmonic means for the returns data are:

	Geometric Mean	**Harmonic Mean**
A.	10.4%	2.5%
B.	1.6%	16.1%
C.	1.02%	8.86%

Answer: B

The geometric mean is calculated as:

$$\text{Geometric mean} = \sqrt[6]{(1.21)(0.90)(1.05)(1.13)(0.81)(1.05)} - 1 = 0.0158 \text{ or } 1.6\ \%$$

The harmonic mean is calculated as follows:

$$\text{Harmonic mean} = \frac{6}{\frac{1}{21} - \frac{1}{10} + \frac{1}{5} + \frac{1}{13} - \frac{1}{19} + \frac{1}{6}} = 16.1\ \%$$

24. Which of the following statements is *most accurate*?

A. Descriptive statistics refer to methods used to make forecasts, estimates, or draw conclusions about a larger data set based on a smaller representative set.

B. Inferential statistics refer to how large volumes of data are converted into useful and readily understood information by summarizing their important characteristics.

C. The arithmetic mean of a particular data set is an example of a sample statistic.

Answer: C

- Descriptive statistics refer to how large volumes of data are converted into useful and readily understood information by summarizing their important characteristics.
- Inferential statistics refer to methods used to make forecasts, estimates, or draw conclusions about a larger data set based on a smaller representative set.

25. Which of the following types of measurement scales sorts data into categories that are ranked according to a certain characteristic, but does not tell us anything about the differences between categories?

A. Nominal scales

B. Ordinal scales

C. Interval scales

Answer: B

- Nominal scales categorize or count data but do not rank them.
- Interval scales rank observations in a manner such that differences between scale values are equal so that values can be added and subtracted meaningfully.

26. Which of the following statements regarding frequency distributions is *least accurate*?

A. Any particular observation could fall into one or more intervals.

B. The set of intervals should include the entire range of values in the data set.

C. The interval with the highest frequency is called the modal class.

Answer: A

Each observation in the data set must fall into only one interval. The intervals must be mutually exclusive and collectively exhaustive.

27. Which of the following statements is *most likely*?

A. The cumulative frequency for an interval is the proportion of total observations that lies in that particular interval.

B. The cumulative absolute frequency for a particular interval is the number of observations that are less than the upper bound for the interval.

C. The cumulative relative frequency for a particular interval is the number of observations that are less than the midpoint of the interval.

Answer: B

- The cumulative frequency/cumulative absolute frequency for an interval equals the number of observations that are less than the upper bound of the interval.
- The cumulative relative frequency for an interval is the proportion of total observations that is less than the upper bound of the interval.

Use the following information to answer Questions 28 to 35:

Cool Pop Soda Corp's annual profit margins since its incorporation are presented below:

Year 1	11%
Year 2	9%
Year 3	4%
Year 4	−2%
Year 5	1%
Year 6	4%

28. The arithmetic mean for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 4.5%

B. 6%

C. 11%

Answer: A

$[11 + 9 + 4 + (-2) + 1 + 4] / 6 = 4.5\%$

29. The median for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 11%

B. 4.5%

C. 4%

Answer: C

There is an even number of observations in the data set so the median equals the average of the middle two numbers after the data set has been arranged in ascending order.

$(4 + 4) / 2 = 4\%$

30. The mode for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 4%

B. 4.5%

C. 11%

Answer: A

The mode is the value that has the highest frequency, 4% (twice).

31. The mean absolute deviation for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 3

B. 3.67

C. 19.56

Answer: B

The MAD equals the mean of the absolute values of the deviations from the mean.

$(|11 - 4.5| + |9 - 4.5| + |4 - 4.5| + |-2 - 4.5| + |1 - 4.5| + |4 - 4.5|) / 6 = 3.67$

32. The variance for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 3.67

B. 4.42

C. 19.58

Answer: C

The variance equals the arithmetic mean of the squared deviations from the mean.

$[(11 - 4.5)^2 + (9 - 4.5)^2 + (4 - 4.5)^2 + (-2 - 4.5)^2 + (1 - 4.5)^2 + (4 - 4.5)^2] / 6 = 19.58$

33. The standard deviation for Cool Pop Soda Corp's profit margins over the years is *closest to*:

A. 1.91%

B. 4.43%

C. 19.58%

Answer: B

The standard deviation equals the positive square root of the variance.

$\sqrt{19.58} = 4.425$

34. Given that the data set is only a representative sample of profit margins over the company's entire existence, the variance for Cool Pop Soda Corp's profit margins over the 6 years is *closest to*:

A. 23.5

B. 19.56

C. 13.47

Answer: A

For sample variance, we must use (n – 1) in the denominator

$[(11 - 4.5)^2 + (9 - 4.5)^2 + (4 - 4.5)^2 + (-2 - 4.5)^2 + (1 - 4.5)^2 + (4 - 4.5)^2] / (6 - 1) = 23.5.$

35. Given that the data set is only a representative sample of profit margins over the company's entire existence, the standard deviation for Cool Pop Soda Corp's profit margins over the 6 years is *closest to*:

A. 3.67%

B. 4.42%

C. 4.85%

Answer: C

The standard deviation of the sample is the square root of the sample variance. $\sqrt{23.5} =$ 4.847%

36. Junglelala's returns over its first 4 years of operations are –1.1%, 1.1%, 1.9%, and 2.8% respectively. The geometric mean of its returns is *closest to*:

A. 1.165%

B. 1.175%

C. 1.185%

Answer: A

$(0.989 \times 1.011 \times 1.019 \times 1.028)^{1/4} - 1 = 1.1646\%$

37. The maximum percentage of observations in a data set that lies further than 1.85 standard deviations away from the mean is *closest to*:

A. 29.2%

B. 45.9%

C. 70.8%

Answer: A

Using Chebyshev's inequality: $1 - [1 / (1.85)^2] = 70.8\%$

At least 70.8% of the data lie within 1.85 standard deviations from the mean. This implies that a maximum of 29.2% of the observations may lie more than 1.85 standard deviations away from the mean.

38. A distribution of returns that has a median that is greater than its mean is *most likely*:

A. Positively skewed

B. Negatively skewed

C. A symmetric distribution

Answer: B

A distribution that has a median which is greater than its mean is negatively skewed.

39. Stock A has an average return of 11% and a standard deviation of 4%. Stock B has an average return of 33% and a standard deviation of 14%. Stock C has an average return of 7% and a standard deviation of 0.33%. Given a risk-free rate of 5%, which investment is *most attractive* based on the coefficient of variation?

A. A

B. C

C. B

Answer: B

The coefficient of variation (CV) equals the standard deviation divided by the mean of the distribution and measures the risk per unit of return. It does not consider the risk-free rate.

A lower CV is preferred.

For Stock A, CV = 4 / 11 = 0.36.

For Stock B, CV = 14 / 33 = 0.42.

For Stock C, CV = 0.33 / 7 = 0.047.

The most attractive investment is Stock C.

40. Portfolio A has a mean return of 11% and a standard deviation of 3%. Portfolio B has a mean return of 17% and a standard deviation of 6%. The risk-free rate of interest is 3%. The respective Sharpe ratios of the two portfolios are *closest to*:

	Portfolio A	**Portfolio B**
A.	2.33	2.67
B.	2.67	2.33
C.	2.33	2.83

Answer: B

The Sharpe Ratio measures excess return per unit of risk.

Sharpe ratio for Portfolio A = (11 – 3) / 3 = 2.67.

Sharpe ratio for Portfolio B = (17 – 3) / 6 = 2.33.

41. A leptokurtic distribution *most likely*:

A. Has a negative excess kurtosis and is more peaked and has thinner tails than a normal distribution

B. Has a positive excess kurtosis and is more peaked and has fatter tails than a normal distribution

C. Has a zero excess kurtosis and is less peaked and has fatter tails than a normal distribution Answer: B

Answer: B

A leptokurtic distribution is **more peaked** and has **fatter tails** than a normal distribution. It also has an excess kurtosis greater than zero.

42. The Sharpe ratio *most likely* measures:

A. Total risk per unit of return

B. Downside risk

C. Excess return per unit of risk

Answer: C

The Sharpe ratio measures the excess return per unit of risk.

43. Which of the following computations uses the sum of cubed deviations from the mean?

A. Sample standard deviation

B. Sample skewness

C. Sample kurtosis

Answer: B

The calculation of sample skewness requires the use of the sum of cubed deviations from the mean.

44. The geometric mean return approximately equals:

A. The arithmetic mean return minus 2 times the standard deviation of returns.

B. The arithmetic mean return minus half the variance of returns.

C. The arithmetic mean return plus half the variance of returns.

Answer: B

Studies have shown that the geometric mean return approximately equals the arithmetic mean return minus half the variance of returns.

45. Which of the following data sets suffers from the lowest level of skewness?

A. One with a sample skewness of −1.5

B. One with a sample skewness of zero

C. One with a sample skewness of +1

Answer: B

The lower the absolute value of sample skewness, the lower the level of skewness in the data set.

Reading 8: Probability Concepts

1. The unconditional probabilities of *p, q,* and *r* are 0.10, 0.60, and 0.30 respectively. The values and the conditional probabilities of *x* are given in the table below.

   The expected value of *x* is *closest to*:

Value of x	$P(x\|p)$	$P(x\|q)$	$P(x\|r)$
13	0.3	0.1	0.7
7	0.4	0.5	0.1
19	0.3	0.4	0.2

   A. 12.40

   B. 12.76

   C. 13.00

Use the following information to answer Questions 2 and 3:

It is Jim's birthday and he has thrown a party for his friends. Everyone except Henry has arrived. George states that the chances of Henry showing up on the party are only 10%.

2. According to George the odds of Henry showing up at the party are:

   A. 1 to 10

   B. 9 to 1

   C. 1 to 9

3. If Jim bets a dollar against George that Henry will show up, his expected return from the bet would be:

   A. $1

   B. $9

   C. $0

Use the joint probability below table to answer Questions 4 to 11:

Joint Probabilities		R_B		
		−0.09	0.075	0.15
	0.11	0.05	0	0
R_A	0.04	0	0.75	0
	−0.03	0	0	0.2

4. The expected return on A is *closest to*:
   A. 0.03
   B. 0.12
   C. 0.42
5. The expected return on B is *closest to*:
   A. 0.031
   B. 0.082
   C. 0.091
6. The variance of A’s returns is *closest to*:
   A. 0.00333
   B. 0.00026
   C. 0.00111
7. The variance of B’s returns is *closest to*:
   A. 0.00244
   B. 0.0494
   C. 0.00111
8. The standard deviation of A’s returns is *closest to*:
   A. 0.0334
   B. 0.0161
   C. 0.00111
9. The standard deviation of B’s returns is *closest to*:

A. 0.00244

B. 0.0494

C. 0.00155

10. The covariance of returns of A and B is *closest to*:

    A. −0.000121

    B. 0.00156

    C. −0.00156

11. The correlation of returns of A and B is *closest to*:

    A. −0.9437

    B. −0.9872

    C. −0.8465

12. A random variable, X, can take any of the five values: 10, 20, 30, 40, and 50. Given that this set of events is mutually exclusive and exhaustive, which of the following is *most likely*?

    A. The probabilities of the five outcomes are 0.1, 0.2, 0.3, 0.4, and 0.5 respectively.

    B. The probabilities of the five outcomes are 0.1, 0.1, 0.1, 0.1, and 0.6 respectively.

    C. The probability of each of the five outcomes equals 0.3.

13. If two events are mutually exclusive:

    A. The probability of both of them occurring equals the sum of their individual probabilities.

    B. The probability of both of them occurring equals the mean of their individual probabilities.

    C. The probability of both of them occurring equals zero.

14. The probability of an economic recession is 0.55 and the probability of good stock performance given a bad economy is 0.36. The probability of not having an expansion and good stock performance is *closest to*:

    A. 0.19

B. 0.2

C. 0.91

Use the following information for Questions 15 and 16:

A job interview at an investment company attracts 100 candidates of which 60% are females and 40% are males. 25% of both female and male candidates have less than 6 months of work experience and the other 75% have at least 6 months of work experience. If only one of them will be hired, the probability that he/she is a:

15. Male and has less than 6 months of work experience is *closest to*:

    A. 0.55

    B. 0.10

    C. 0.15

16. Female or has at least 6 months of work experience is *closest to*:

    A. 0.68

    B. 0.80

    C. 0.90

Use the following information for Questions 17 to 21:

The following data was recorded from a sample of 500 cricket matches played by a particular team:

The probability that the team chooses to bat first is 0.57.

The probability that the team chooses not to bat first is 0.43.

The probability that a team wins a match *given* that it chose to bat first is 0.69.

The probability that a team wins a match *given* that it chose not to bat first is 0.81.

All the matches resulted in one of the teams winning and the other losing the match.

17. The conditonal probability of a team not winning a match given that it chose not to bat first is *closest to*:

A. 0.19

B. 0.082

C. 0.62

18. The conditonal probability of a team not winning a match given that it chose to bat first is *closest to*:

A. 0.19

B. 0.31

C. 0.18

19. The probability that a team chooses to bat first and wins the match is *closest to*:

A. 0.69

B. 0.39

C. 0.87

20. The probability that a team chooses not to bat first and does not win the match is *closest to*:

A. 0.19

B. 0.082

C. 0.62

21. The unconditional probability of the team not winning a match is *closest to*:

A. 0.19

B. 0.74

C. 0.26

Use this information for Questions 22 and 23:

You toss a fair coin 10 times. The outcome is heads 7 times.

22. Each coin toss is:

A. A dependent event

B. An independent event

C. A conditional event

23. The probability of obtaining a head on the 11th toss is *closest to*:

    A. 0.3

    B. 0.5

    C. 0.7

Use the following information for Questions 24 and 25:

Twelve questions have been submitted for a multiple choice exam. A computer program will randomly select any 10 out of these 12 questions for the actual exam.

24. In how many different ways can 10 questions out of these 12 be selected for the exam if the order of selection is not important?

    A. 66

    B. 239,500,800

    C. 120

25. In how many different ways can we number 10 questions out of these 12 from 1 to 10? The question selected first will be numbered "1," the next one will be numbered "2," and so on.

    A. 66

    B. 239,500,800

    C. 120

Use the following information for Questions 26 to 31:

A board game's rules state that:

1. The game uses just one die, and players take turns rolling it.
2. If a player rolls a 6, she rolls again up to a maximum of three rolls per turn.
3. If a player rolls three consecutive 6's, she loses her turn and scores zero points.
4. A player's score on any turn is the total of her roll(s) on that turn.

The players are using a fair die for the game.

26. The probability of scoring exactly 3 points on a turn is *closest to*:

    A. 16.67%

    B. 5.88%

    C. 5.56%

27. The probability of scoring exactly 6 points on a turn is *closest to*:

    A. 0.00%

    B. 16.67%

    C. 33.33%

28. The probability of rolling a 6 on the first roll is *closest to*:

    A. 0.00%

    B. 16.67%

    C. 33.33%

29. The probability of scoring zero points is *closest to*:

    A. 0.00%

    B. 0.46%

    C. 5.55%

30. The probability of scoring the highest possible score on a turn is *closest to*:

    A. 0.00%

    B. 0.46%

    C. 5.55%

31. The probability of scoring exactly 10 points on a turn is *closest to*:

    A. 8.33%

    B. 2.77%

    C. 5.55%

Use the following information for Questions 32 and 33:

An oil refinery has a fire alarm system installed on its premises. The alarm is supposed to go off in case of a fire. The probability of a fire occurring on any given day is 0.25%. Unfortunately, the system that is installed is not perfect. When a fire actually occurs, the alarm goes off 99% of the time. Further, the probability of the alarm going off when there is no fire is believed to be 1%.

32. What is the probability of the alarm rightly not going off on a particular day?

    A. 0.1%

    B. 99%

    C. 1%

33. Given that the alarm went off today, the probability of there being a fire is *closest to*:

    A. 80.1%

    B. 99%

    C. 19.9%

34. Which of the following is *least likely* regarding the correlation coefficient?

    A. It may range from −1 to +1.

    B. It measures the strength of the relationship between two variables.

    C. It is expressed in the same units as the data itself.

35. Which of the following is *most likely* regarding covariance?

    A. Covariance is symmetric.

    B. Covariance may only lie between 0 and +1.

    C. Covariance has no unit.

Reading 8: Probability Concepts

1. The unconditional probabilities of p, q, and r are 0.10, 0.60, and 0.30 respectively. The values and the conditional probabilities of x are given in the table below.

   The expected value of x is *closest to*:

Value of x	$P(x\|p)$	$P(x\|q)$	$P(x\|r)$
13	0.3	0.1	0.7
7	0.4	0.5	0.1
19	0.3	0.4	0.2

   A. 12.40

   B. 12.76

   C. 13.00

   Answer: B

   The expected value of x can be calculated as:

   $(0.1)[(13)(0.3) + (7)(0.4) + (19)(0.3)] + (0.6)[(13)(0.1) + (7)(0.5) + (19)(0.4)] + (0.3)[(13)(0.7) + (7)(0.1) + (19)(0.2)] = 12.76$

Use the following information to answer Questions 2 and 3:

It is Jim's birthday and he has thrown a party for his friends. Everyone except Henry has arrived. George states that the chances of Henry showing up on the party are only 10%.

2. According to George the odds of Henry showing up at the party are:

   A. 1 to 10

   B. 9 to 1

   C. 1 to 9

   Answer: C

   The odds *for* an event are stated as the probability of the event occurring to the probability of the event not occurring.

3. If Jim bets a dollar against George that Henry will show up, his expected return from the bet would be:

   A. \$1

   B. \$9

   C. \$0

   Answer: C

   The expected return on a bet according to the stated odds is always zero and is calculated as:

   $(-\$1)(0.9) + (\$9)(0.1) = 0$

Use the joint probability below table to answer Questions 4 to 11:

Joint Probabilities		R_B		
		−0.09	0.075	0.15
	0.11	0.05	0	0
R_A	0.04	0	0.75	0
	−0.03	0	0	0.2

4. The expected return on A is *closest to*:

   A. 0.03

   B. 0.12

   C. 0.42

Answer: A

$E(R_A) = (0.11)(0.05) + (0.04)(0.75) + (-0.03)(0.2) = 0.0295$ or 0.03

5. The expected return on B is *closest to*:

   A. 0.031

   B. 0.082

   C. 0.091

   Answer: B

   $E(R_B) = (-0.09)(0.05) + (0.075)(0.75) + (0.15)(0.2) = 0.08175$ or 0.082

6. The variance of A's returns is *closest to*:

   A. 0.00333

   B. 0.00026

   C. 0.00111

   Answer: C

   $Var(A) = (0.05)(0.11 - 0.0295)^2 + (0.75)(0.04 - 0.0295)^2 + (0.2)(-0.03 - 0.0295)^2 = 0.00111475$ or 0.00111 where 0.0295 is the expected value of A.

7. The variance of B's returns is *closest to*:

   A. 0.00244

   B. 0.0494

   C. 0.00111

   Answer: A

   $Var(B) = (0.05)(-0.09 - 0.082)^2 + (0.75)(0.075 - 0.082)^2 + (0.2)(0.15 - 0.082)^2 = 0.00244$

   where 0.082 is the expected value of B.

8. The standard deviation of A's returns is *closest to*:

   A. 0.0334

   B. 0.0161

   C. 0.00111

   Answer: A

   The standard deviation is the positive square root of the variance.

   Standard deviation of A = $(0.00111)^{0.5} = 0.0334$

9. The standard deviation of B's returns is *closest to*:

   A. 0.00244

   B. 0.0494

   C. 0.00155

   Answer: B

   Standard deviation of B = $(0.00244)^{0.5} = 0.0494$

10. The covariance of returns of A and B is *closest to*:

    A. −0.000121

    B. 0.00156

    C. −0.00156

    Answer: C

    The covariance is calculated as:

    $Cov(_{A,B}) = (0.05)(0.11 - 0.0295)(-0.09 - 0.082) + (0.75)(0.04 - 0.0295)(0.075 - 0.082)$

+ (0.2)(−0.03 − 0.0295)(0.15 − 0.082) = −0.00156.

11. The correlation of returns of A and B is *closest to*:

    A. −0.9437

    B. −0.9872

    C. −0.8465

    Answer: A

    The correlation coefficient is calculated as:

    = (−0.00156)/[(0.0334)(0.0494)] = −0.9437

    You may have computed slightly different figures because of rounding.

12. A random variable, X, can take any of the five values: 10, 20, 30, 40, and 50. Given that this set of events is mutually exclusive and exhaustive, which of the following is *most likely*?

    A. The probabilities of the five outcomes are 0.1, 0.2, 0.3, 0.4, and 0.5 respectively

    B. The probabilities of the five outcomes are 0.1, 0.1, 0.1, 0.1, and 0.6 respectively

    C. The probability of each of the five outcomes equals 0.3

    Answer: B

    The sum of the probabilities of any set of mutually exclusive and exhaustive events equals 1.

13. If two events are mutually exclusive:

    A. The probability of both of them occurring equals the sum of their individual probabilities.

    B. The probability of both of them occurring equals the mean of their individual probabilities.

    C. The probability of both of them occurring equals zero.

    Answer: C

    Events are mutually exclusive when they cannot occur together i.e., only one of them can occur.

14. The probability of an economic recession is 0.55 and the probability of good stock performance given a bad economy is 0.36. The probability of not having an expansion and good stock performance is *closest to*:

    A. 0.19

    B. 0.2

    C. 0.91

    Answer: B

    Using the multiplication rule, the probability of a recession *and* good stock performance is calculated as:

    (0.55)(0.36) = 0.198 or 0.2

Use the following information for Questions 15 and 16:

A job interview at an investment company attracts 100 candidates of which 60% are females and 40% are males. 25% of both female and male candidates have less than 6 months of work experience and the other 75% have at least 6 months of work experience. If only one of them will be hired, the probability that he/she is a:

15. Male and has less than 6 months of work experience is *closest to*:

    A. 0.55

    B. 0.10

    C. 0.15

    Answer: B

    The joint probability of the person hired being a male and having less than 6 months of work experience is calculated as:

    P(Male and Inexperienced) = P(Inexperienced and Male)
    = P(Inexperienced|Male)P(Male) = (0.25)(0.40) = 0.1

16. Female and has at less 6 months of work experience is *closest to*:

    A. 0.68

B. 0.80

C. 0.90

Answer: C

P(Female or Experienced) = P(Experienced) + P(Female) – P(Experienced and Female) = 0.75 + 0.6 – (0.75)(0.6) = 0.9

Use the following information for Questions 17 to 21:

The following data was recorded from a sample of 500 cricket matches played by a particular team:

The probability that the team chooses to bat first is 0.57.

The probability that the team chooses not to bat first is 0.43.

The probability that a team wins a match *given* that it chose to bat first is 0.69.

The probability that a team wins a match *given* that it chose not to bat first is 0.81.

All the matches resulted in one of the teams winning and the other losing the match.

17. The conditional probability of a team not winning a match given that it chose not to bat first is *closest to*:

A. 0.19

B. 0.082

C. 0.62

Answer: A

The conditional probability of a team not winning a match given that it chose not to bat first is given as:

1 – P(winning|chose not to bat first) = 1 – 0.81 = 0.19

18. The conditional probability of a team not winning a match given that it chose to bat first is *closest to*:

A. 0.19

B. 0.31

C. 0.18

Answer: B

The conditional probability of a team not winning a match given that it chose to bat first is given as:

1 – P(winning|chose to bat first) = 1 – 0.69 = 0.31

19. The probability that a team chooses to bat first and wins the match is *closest to*:

A. 0.69

B. 0.39

C. 0.87

Answer: B

The joint probability, P(chose to bat first **and** wins), of a team that chose to bat first wins that match is calculated as:

P(chose to bat first) × P(wins|chose to bat first) = (0.57)(0.69) = 0.39

20. The probability that a team chooses not to bat first and does not win the match is *closest to*:

A. 0.19

B. 0.082

C. 0.62

Answer: B

The joint probability, P(chooses not to bat and does not win), that a team chose not to bat first **and** does not win is calculated as:

P(chose not to bat first) × P(not win|chose not to bat first) = (0.43)(1 – 0.81) = 0.082

21. The unconditional probability of the team not winning a match is *closest to*:

A. 0.19

B. 0.74

C. 0.26

Answer: C

The unconditional probability of not winning a match is the sum of the joint probabilities of not winning in both cases.

P(chose to bat first) × P(not win|chose to bat first) + P(chose not to bat first) × P(not win|chose not to bat first) = 0.177 + 0.082 = 0.259 or 0.26

Use this information for Questions 22 and 23:

You toss a fair coin 10 times. The outcome is heads 7 times.

22. Each coin toss is:

    A. A dependent event

    B. An independent event

    C. A conditional event

    Answer: B

    Every toss of this coin is an independent event as the result of the toss is not affected by the result of any other toss.

23. The probability of obtaining a head on the 11th toss is *closest to*:

    A. 0.3

    B. 0.5

    C. 0.7

    Answer: B

    Since every toss is independent, the probability of obtaining a head on the 11th toss is 0.5.

Use the following information for Questions 24 and 25:

Twelve questions have been submitted for a multiple choice exam. A computer program will randomly select any 10 out of these 12 questions for the actual exam.

24. In how many different ways can 10 questions out of these 12 be selected for the exam if the order of selection is not important?

    A. 66

    B. 239,500,800

    C. 120

    Answer: A

    If the order is not important then the number of possible combinations is simply calculated as ${}_{12}C_{10}$, or 66.

25. In how many different ways can we number 10 questions out of these 12 from 1 to 10? The question selected first will be numbered “1,” the next one will be numbered “2,” and so on.

    A. 66

    B. 239,500,800

    C. 120

    Answer: B

    The number of ways that the set of 12 questions can be numbered from 1 to 10 (order is important) is calculated as ${}_{12}P_{10}$, or 239,500,800.

Use the following information for Questions 26 to 31:

A board game’s rules state that:

1. The game uses just one die, and players take turns rolling it.
2. If a player rolls a 6, she rolls again up to a maximum of three rolls per turn.
3. If a player rolls three consecutive 6’s, she loses her turn and scores zero points.
4. A player’s score on any turn is the total of her roll(s) on that turn.

The players are using a fair die for the game.

26. The probability of scoring exactly 3 points on a turn is *closest to*:

    A. 16.67%

    B. 5.88%

    C. 5.56%

    Answer: A

    A player will have to roll a 3 to score 3 points. The probability of rolling a 3 on a roll of a fair die is 1/6 or 16.67%.

27. The probability of scoring exactly 6 points on a turn is *closest to*:

    A. 0.00%

    B. 16.67%

    C. 33.33%

    Answer: A

    A player cannot score 6 points on a turn. If she rolls a 6, she must roll again.

28. The probability of rolling a 6 on the first roll is *closest to*:

    A. 0.00%

    B. 16.67%

    C. 33.33%

    Answer: B

    The probability of rolling a 6 on the first roll equals 1/6 or 16.67%.

29. The probability of scoring zero points is *closest to*:

    A. 0.00%

    B. 0.46%

    C. 5.55%

    Answer: B

    A player scores zero points when she rolls a 6 three times. The probability of rolling a 6 on any roll is 1/6 and the probability of rolling three consecutive 6's is (1/6)(1/6)(1/6) = 0.00463 or 0.46%.

30. The probability of scoring the highest possible score on a turn is *closest to*:

    A. 0.00%

    B. 0.46%

    C. 5.55%

    Answer: B

    To score 17 points, a player will have to roll a 6 on both the first and the second roll, and a 5 on the third roll. Therefore, the probability of scoring 17 points is (1/6)(1/6)(1/6) = 0.00463 or 0.46%.

31. The probability of scoring exactly 10 points on a turn is *closest to*:

    A. 8.33%

    B. 2.77%

    C. 5.55%

    Answer: B

    To score 10 points, a player must roll a 6 on the first and a 4 on the second roll. Therefore, the probability of scoring a 10 is calculated as (1/6)(1/6) = 0.0277 or 2.77%.

Use the following information for Questions 32 and 33:

An oil refinery has a fire alarm system installed on its premises. The alarm is supposed to go off in case of a fire. The probability of a fire occurring on any given day is 0.25%. Unfortunately, the system that is installed is not perfect. When a fire actually occurs, the alarm goes off 99% of the time. Further, the probability of the alarm going off when there is no fire is believed to be 1%.

32. What is the probability of the alarm rightly not going off on a particular day?

A. 0.1%

B. 99%

C. 1%

Answer: B

On days when there isn't a fire, the alarm still goes off 1% of the time, which means that the probability of it not going off on days with no fire is (1 – 0.01%) = 0.99 or 99%.

33. Given that the alarm went off today, the probability of there being a fire is *closest to*:

A. 80.1%

B. 99%

C. 19.9%

Answer: C

This question requires us to use the Bayes' Theorem for updated probability.

Given a set of prior probabilities for an event, if you receive new information, the rule for updating the probability of the event is given as:

$$\text{Updated probability of event given the new information} = \frac{\text{Probability of new information given event}}{\text{Unconditional probability of the new information}} \times \text{Prior probability of event}$$

In this question, the event is the occurrence of a fire incident.

P(information|event) = P(Alarm goes off|Fire) = 99%

Prior probability of event = P(Fire) = 0.25%

Unconditional probability of information, P(Alarm goes off), is calculated using the total probability rule:

P(Alarm goes off|Fire) × P(Fire) + P(Alarm goes off|No fire) × P(No fire) = (0.99)(0.0025) + (0.01)(.9975) = 0.01245

P(Fire) = (0.0025)(0.99)/(0.01245) = 0.1987 or 19.9%

34. Which of the following is *least likely* regarding the correlation coefficient?

A. It may range from −1 to +1.

B. It measures the strength of the relationship between two variables.

C. It is expressed in the same units as the data itself.

Answer: C

The correlation coefficient has no unit.

35. Which of the following is *most likely* regarding covariance?

A. Covariance is symmetric.

B. Covariance may only lie between 0 and +1.

C. Covariance has no unit.

Answer: A

Covariance is expressed in the same units as the data. Further, it can lie anywhere from negative infinity to positive infinity.

Reading 9: Common Probability Distributions

1. Which of the following statements regarding probability distributions is *least likely*?

   A. The probability of an outcome cannot be less than zero.

   B. The probability of an outcome must lie between –1 and +1.

   C. The sum of the probabilities of all possible distinct outcomes of an event must equal 1.

2. Which of the following statements is *most likely*?

   A. For a discrete distribution, p(x) equals 0 when x cannot occur, while for a continuous distribution, p(x) equals zero even though x can occur.

   B. For a continuous distribution, p(x) equals 0 when x cannot occur, while for a discrete distribution, p(x) equals zero even though x can occur.

   C. For a continuous distribution, p(x) > 0 if x is a possible outcome.

Use the following information to answer Questions 3 to 7:

The probability function for a random variable is given as p(x) = x/100. The set of possible values that the random variable, X, can take is given by X = (10, 20, 30, 40). For other values of x, p(x) = 0.

3. p(10) equals:

   A. 0.1

   B. 0.2

   C. 0

4. p(30) equals:

   A. 0.1

   B. 0.2

   C. 0.3

5. p(35) equals

   A. 0.1

   B. 0.35

   C. 0

6. F(35) equals:

   A. 0.35

   B. 0.6

   C. 0

7. F(40) equals:

   A. 0

   B. 0.40

   C. 1

Use the following information to answer Questions 8 to 11:

The probability that a baseball player will swing his bat on any given pitch equals 0.35. He faces 20 pitches in each batting practice session.

8. How many different combinations are there of swinging the bat 8 times in 20 pitches?

   A. 125,970

   B. 5,079,110,400

   C. 160

9. The probability of swinging on 8 pitches from 20 or P(x = 8) is *closest to*:

   A. 0.16

   B. 0.014

   C. 0.23

10. How many times is the player expected to swing the bat at any given batting practice?

    A. 6

B. 7

C. 8

11. What is the standard deviation of the number of times he will swing the bat at any given practice session?

A. 4.55

B. 2.13

C. 20.7

12. The average annual return on a stock over its entire history is 10% and the standard deviation of returns equals 7.5%. Given that the stock's returns are distributed normally, calculate the 95% confidence interval for the return in any given year.

A. 4.7% to 24.7%

B. −4.7% to 24.7%

C. −2.375% to 22.375%

13. What does an observation's z-score essentially represent?

A. The number of standard deviations away from the variance the given observation actually lies.

B. The number of standard deviations away from the mean the given observation's expected value lies.

C. The number of standard deviations away from the mean the given observation actually lies.

Use the following information to answer Questions 14 to 17:

The points, X, scored by students in a class on their final exam are normally distributed with a mean of 65 and standard deviation of 20.

14. What is the probability that the points scored by a given student will be less than 80 points?

A. 80.23%

B. 77.34%

C. 74.22%

15. What is the probability that the points scored by a given student will be more than 75?

    A. 69.15%

    B. 65.54%

    C. 30.85%

16. What is the probability that the points scored by a given student will be less than 35?

    A. 97.72%

    B. 47.72%

    C. 6.68%

17. What is the probability that the points scored by a given student will be between 75 and 90?

    A. 20.29%

    B. 58.59%

    C. 10.25%

18. Portfolio A has an expected return of 9% and a standard deviation of 12%, while Portfolio B has an expected return of 12% and a standard deviation of 15%. Using Roy's Safety-first criterion and assuming that the target return equals 5%, which portfolio should be preferred?

    A. Portfolio B

    B. Portfolio A

    C. The investor would be indifferent between the two portfolios.

19. Which of the following statements is *most likely*?

    A. A portfolio with a higher SF Ratio also has a higher probability of attaining returns higher than the threshold level.

    B. A portfolio with a lower SF Ratio also has a lower probability of attaining returns lower than the threshold level.

    C. A portfolio with a higher SF Ratio also has a lower probability of attaining returns higher than the threshold level.

20. If the effective annual rate is given as 7.34%, the continuously compounded stated annual interest rate equals?

    A. 7.08%

    B. 55.04%

    C. 7.62%

21. An investment of $1,000 appreciates to a value of $1,450 in 3.5 years. What is the continuously compounded annual return on this investment?

    A. 10.62%

    B. 37.16%

    C. 4.26%

22. Which of the following is *least likely* regarding the lognormal distribution?

    A. It is bounded by zero at the lower end.

    B. It is skewed to the left.

    C. Its upper range is unbounded.

23. Do the Monte Carlo and historical simulation models facilitate “What if?” analysis?

	Monte Carlo Simulation	**Historical Simulation**
A.	Yes	Yes
B.	Yes	No
C.	No	Yes

24. Which of the following is *least likely* regarding the continuous uniform distribution?

    A. P(X = x) = 0 for all values of x that lie between the parameters of the distribution.

    B. The cumulative distribution function for the variable rises in steps.

    C. P(X = x) = 0 for all values of x that lie outside the parameters of the distribution.

Reading 9: Common Probability Distributions

1. Which of the following statements regarding probability distributions is *least likely*?

   A. The probability of an outcome cannot be less than zero.

   B. The probability of an outcome must lie between –1 and +1.

   C. The sum of the probabilities of all possible distinct outcomes of an event must equal 1.

   Answer: B

   The probability of a given outcome must lie between zero and +1.

2. Which of the following statements is *most likely*?

   A. For a discrete distribution, p(x) equals 0 when x cannot occur, while for a continuous distribution, p(x) equals zero even though x can occur.

   B. For a continuous distribution, p(x) equals 0 when x cannot occur, while for a discrete distribution, p(x) equals zero even though x can occur.

   C. For a continuous distribution, $p(x) > 0$ if x is a possible outcome.

   Answer: A

   For a discrete distribution, p(x) equals 0 when x cannot occur, while for a continuous distribution, p(x) equals zero even though x can occur. For a continuous distribution $p(x) = 0$ even if x is a possible outcome.

Use the following information to answer Questions 3 to 7:

The probability function for a random variable is given as $p(x) = x/100$. The set of possible values that the random variable, X, can take is given by X = (10, 20, 30, 40). For other values of x, $p(x) = 0$.

3. p(10) equals:

   A. 0.1

B. 0.2

C. 0

Answer: A

p(10) = 10/100 = 0.1

4. p(30) equals:

A. 0.1

B. 0.2

C. 0.3

Answer: C

p(30) = 30/100 = 0.3

5. p(35) equals

A. 0.1

B. 0.35

C. 0

Answer: C

p(35) = 0 because 35 is not a possible outcome for the random variable.

6. F(35) equals:

A. 0.35

B. 0.6

C. 0

Answer: B

F(35) = p(10) + p(20) + p(30) = 0.1 + 0.2 + 0.3 = 0.6

7. F(40) equals:

A. 0

B. 0.40

C. 1

Answer: C

$F(40) = p(10) + p(20) + p(30) + p(40) = 0.1 + 0.2 + 0.3 + 0.4 = 1.0$

Use the following information to answer Questions 8 to 11:

The probability that a baseball player will swing his bat on any given pitch equals 0.35. He faces 20 pitches in each batting practice session.

8. How many different combinations are there of swinging the bat 8 times in 20 pitches?

   A. 125,970

   B. 5,079,110,400

   C. 160

   Answer: A

   The number of possible combinations of swinging the bat 8 times when facing 20 pitches equals ${}_{20}C_8 = 125{,}970$

9. The probability of swinging on 8 pitches from 20 or $P(x = 8)$ is *closest to:*

   A. 0.16

   B. 0.014

   C. 0.23

   Answer: A

   Using the binomial distribution:

   $p(x = 8) = {}_{20}C_8\ (0.35\hat{\ }8)\ (0.65\hat{\ }12) = 16.14\%$ or 0.16

10. How many times is the player expected to swing the bat at any given batting practice?

    A. 6

    B. 7

    C. 8

    Answer: B

    $E(X) = (n)(p) = (20)(0.35) = 7$

11. What is the standard deviation of the number of times he will swing the bat at any given practice session?

   A. 4.55

   B. 2.13

   C. 20.7

   Answer: B

   Var(X) = (n)(p)(1−p) = (20)(0.35)(0.650) = 4.55

   Std. Dev = 4.55 ^ 0.5 = 2.13

12. The average annual return on a stock over its entire history is 10% and the standard deviation of returns equals 7.5%. Given that the stock's returns are distributed normally, calculate the 95% confidence interval for the return in any given year.

   A. 4.7% to 24.7%

   B. −4.7% to 24.7%

   C. −2.375% to 22.375%

   Answer: B

   The reliability factor for a 95% confidence interval equals 1.96. Therefore, the confidence interval is calculated as:

   $10 \pm (1.96) \times (7.5)$

13. What does an observation's z-score essentially represent?

   A. The number of standard deviations away from the variance the given observation actually lies.

   B. The number of standard deviations away from the mean the given observation's expected value lies.

   C. The number of standard deviations away from the mean the given observation actually lies.

   Answer: C

   An observation's z-score basically represents the number of standard deviations away from the mean the given observation actually lies.

Use the following information to answer Questions 14 to 17:

The points, X, scored by students in a class on their final exam are normally distributed with a mean of 65 and standard deviation of 20.

14. What is the probability that the points scored by a given student will be less than 80 points?

    A. 80.23%

    B. 77.34%

    C. 74.22%

    Answer: B

    $P(Z \leq 0.75) = 0.7734$

15. What is the probability that the points scored by a given student will be more than 75?

    A. 69.15%

    B. 65.54%

    C. 30.85%

    Answer: C.

    $P(Z \geq 0.5) = 1 - P(Z \leq 0.5) = 1 - 0.6915 = 0.3085$

16. What is the probability that the points scored by a given student will be less than 35?

    A. 97.72%

    B. 47.72%

    C. 6.68%

    Answer: C

    $P(Z \leq -1.5) = P(Z \geq 1.5) = 1 - P(Z \leq 1.5) = 1 - 0.9332 = 0.0668$

17. What is the probability that the points scored by a given student will be between 75 and 90?

    A. 20.29%

    B. 58.59%

C. 10.25%

Answer: A

$P(Z \leq 1.25) - P(Z \leq 0.5) = 0.8944 - 0.6915 = 0.2029$

18. Portfolio A has an expected return of 9% and a standard deviation of 12%, while Portfolio B has an expected return of 12% and a standard deviation of 15%. Using Roy's Safety-first criterion and assuming that the target return equals 5%, which portfolio should be preferred?

    A. Portfolio B

    B. Portfolio A

    C. The investor would be indifferent between the two portfolios.

    Answer: A

    Portfolio B has a higher SF Ratio so it is preferred. ($7/15 = 0.47$ versus $4/12 = 0.33$).

19. Which of the following statements is *most likely*?

    A. A portfolio with a higher SF Ratio also has a higher probability of attaining returns higher than the threshold level.

    B. A portfolio with a lower SF Ratio also has a lower probability of attaining returns lower than the threshold level.

    C. A portfolio with a higher SF Ratio also has a lower probability of attaining returns higher than the threshold level.

    Answer: A

    A portfolio with a *higher* SF Ratio also has a *higher* probability of attaining returns higher than the threshold level. Alternatively, it has a *lower* probability of attaining returns *lower* than the threshold level.

20. If the effective annual rate is given as 7.34%, the continuously compounded stated annual interest rate equals?

    A. 7.08%

    B. 55.04%

    C. 7.62%

    Answer: A

r_{cc} = ln (EAR + 1). Therefore, r_{cc} = ln (1.0734) = 7.08%

21. An investment of $1,000 appreciates to a value of $1,450 in 3.5 years. What is the continuously compounded annual return on this investment?

    A. 10.62%

    B. 37.16%

    C. 4.26%

    Answer: A

    r_{cc} = [ln (HPR + 1)]/ t. Therefore, r_{cc} = [ln (0.45 + 1)]/ 3.5 = 10.62%

22. Which of the following is *least likely* regarding the lognormal distribution?

    A. It is bounded by zero at the lower end.

    B. It is skewed to the left.

    C. Its upper range is unbounded.

    Answer: B

    The lognormal distribution is skewed to the right (positively skewed).

23. Do the Monte Carlo and historical simulation models facilitate "What if?" analysis?

	Monte Carlo Simulation	**Historical Simulation**
A.	Yes	Yes
B.	Yes	No
C.	No	Yes

    Answer: B

    Monte Carlo simulation does lend itself to "What if?" analysis. However, historical simulation does not.

24. Which of the following is *least likely* regarding the continuous uniform distribution?

    A. P(X = x) = 0 for all values of x that lie between the parameters of the distribution.

B. The cumulative distribution function for the variable rises in steps.

C. P(X = x) = 0 for all values of x that lie outside the parameters of the distribution.

Answer: B

- The cumulative distribution function (cdf) for the continuous uniform distribution is an upward sloping straight line. The cdf for the discrete uniform distribution rises in steps.
- The probability of any outcomes outside a and b, the parameters of the distribution equals zero.
- Since it is a continuous distribution, the probability of any individual outcome that lies within the parameters of the distribution is also zero.

Reading 10: Sampling and Estimation

1. A research assistant is evaluating the monthly returns on 30 different stocks over a period of 5 years. The data set she is studying is *most likely* an example of:

   A. Longitudinal data.

   B. Panel data.

   C. Cross-sectional data.

2. Which of the following statements is *least likely* regarding the assertions of the Central Limit Theorem?

   A. As long as sample size is large, the sample mean and the population mean are equal.

   B. As long as sample size is large, the sample standard deviation equals the population standard deviation divided by n.

   C. As long as sample size is large, the sample variance equals the population variance divided by n.

3. A sample containing the monthly returns for 75 U.S. stocks has a mean of 5% and a standard deviation of 12%. The standard error of the sample mean:

   A. Cannot be calculated given the information.

   B. Approximately equals 1.39%.

   C. Approximately equals 0.58%.

4. Which of the following is *least likely* a desirable characteristic of an estimator?

   A. Unbiasedness

   B. Efficiency

   C. Effectiveness

5. Which of the following is *least likely* regarding a student's t-distribution?

A. It has a lower peak and thinner tails than the normal distribution.

B. It is defined by a single parameter, the degrees of freedom.

C. It is symmetrical.

6. In which of the following scenarios should the z-distribution be used over the t-distribution?

   A. To construct confidence intervals for a *normally* (or approximately normally) distributed population whose variance is *unknown* when the sample size is small (n < 30).

   B. To construct confidence intervals for a *non-normally* distributed population whose variance is *known* and the sample size is *large* (n > 30).

   C. To construct confidence intervals for a *normally* distributed population whose variance is *unknown* if the sample size is *large* (n > 30).

7. Which of the following statements is *most likely*?

   A. A *larger* sample size results in a *smaller* standard error and *reduces* the width of the confidence interval.

   B. A *smaller* sample size results in a *larger* standard error and *reduces* the width of the confidence interval.

   C. A *smaller* sample size results in a *smaller* standard error and *reduces* the width of the confidence interval.

8. A sample of the monthly returns of ABC Stock over the last 3.5 years has a mean return of 0.5% and a standard deviation of 0.075%. The 95% confidence interval for the average monthly returns on ABC Stock is *closest to*?

   A. 0.4766% to 0.5234%

   B. 0.4773% to 0.5227%

   C. 0.4850% to 0.5150%

9. A sample of the monthly returns of ABC Stock over the last 4 years has a mean return of 0.8%. The standard deviation of monthly returns over ABC's entire history equals 0.025%. The 95% confidence interval

for the average monthly returns on ABC Stock is *closest to*?

A. 0.7850% to 0.8150%

B. 0.7929% to 0.8071%

C. 0.7927% to 0.8073%

10. The sampling distribution of a statistic is *most likely* made up of all possible:

    A. Sample statistics computed from samples of different sizes.

    B. Sample statistics computed from samples of the same size.

    C. Observations from the underlying population.

11. If the data set used by a researcher includes data that were not available at the time the study was conducted, the data set being studied *most likely* suffers from:

    A. Look-ahead bias

    B. Survivorship bias

    C. Time-period bias

12. The probability (1-α) is *most likely* referred to as:

    A. Level of significance

    B. Confidence interval

    C. Degree of confidence

13. A simple random sample is *most likely*:

    A. One in which each member of the population has a greater than 1% chance of being chosen

    B. One in which each member of the population has an equal chance of being chosen

    C. One in which each member of the population has a 1% chance of being chosen

14. Which of the following statements is *most accurate*?

    A. Sampling error is the distribution of all possible values of a sample statistic.

B. Sampling error equals the difference between the sample statistic and the corresponding population parameter.

C. Sampling error is the total difference between the sample statistic from one sample and the sample statistic from another sample.

15. Data collected by observing several subjects at the same point in time is *most likely* referred to as:

    A. Cross-sectional data

    B. Time-series data

    C. Panel data

16. Longitudinal data *most likely* refers to?

    A. Data collected over time about a single characteristic of multiple observational units

    B. Data collected over time about multiple characteristics of the same observational unit

    C. Data collected over time about multiple characteristics of multiple observational units

17. The standard error of a sample that has an arithmetic mean of 11, a standard deviation of 3, and 20 observations is *closest to*:

    A. 0.9

    B. 0.67

    C. 0.15

18. Which of the following statements is *most accurate* regarding a student's t-distribution?

    A. It is symmetrical.

    B. It is defined by a single parameter, the degrees of freedom, where degrees of freedom equal sample size.

    C. As the degrees of freedom increase, the t-distribution becomes less peaked and the tails become fatter.

19. A sample of 100 students was selected from a school. The average points scored by these 100 students were 69. Assuming that the

distribution of scores of all students in this school is approximately normal, and given that the population standard deviation is 31, the 90% confidence interval is *closest to*?

A. 19.7 to 43.32

B. 63.9 to 74.1

C. 58.64 to 74.08

20. Ashley selected a sample of 20 stocks and calculated their mean return over a 3-year period to be 4.25%. Given that the sample standard deviation is 0.3% and assuming that the population is normally distributed, the 90% confidence interval is *closest to*:

A. 4.13% to 4.37%

B. 4.22% to 4.44%

C. 4.14% to 4.36%

21. Brian selected a sample of 20 stocks and calculated their mean return for the year to be 6.3%. Given that the population standard deviation is 1.2% and that the population is normally distributed, the 90% confidence interval is *closest to*:

A. 5.86% to 6.74%

B. 5.78% to 6.83%

C. 5.84% to 6.76%

22. Given that the sample size is less than 30, the population variance is known, and the population is not normally distributed, which of the following is *most likely*?

A. The t-stat is the appropriate test statistic.

B. The z-stat is the appropriate test statistic.

C. Neither the z nor the t-stats can be used.

23. Compared to simple random sampling, stratified random sampling *most likely*:

A. Increases the size of the sample.

B. Improves the representativeness of the sample.

C. Increases the sampling error.

24. A data set is examined extensively until a relationship that appears to be statistically significant is discovered. This *most likely* indicates that the study might suffer from:

    A. Data mining bias

    B. Sample selection bias

    C. Look-ahead bias

25. Which of the following will *least likely* result in a wider confidence interval?

    A. Use of the z-distribution over the t-distribution

    B. Use of a smaller sample size

    C. Use of a lower significance level

Reading 10: Sampling and Estimation

1. A research assistant is evaluating the monthly returns on 30 different stocks over a period of 5 years. The data set she is studying is *most likely* an example of:

   A. Longitudinal data.

   B. Panel data.

   C. Cross-sectional data.

   Answer: B

   Panel data refers to data collected over time (5 years) about a single characteristic (monthly returns) of multiple observational units (30 different stocks).

2. Which of the following statements is *least likely* regarding the assertions of the Central Limit Theorem?

   A. As long as sample size is large, the sample mean and the population mean are equal.

   B. As long as sample size is large, the sample standard deviation equals the population standard deviation divided by n.

   C. As long as sample size is large, the sample variance equals the population variance divided by *n*.

   Answer: B

   As long as sample size is large, the sample standard deviation equals the population standard deviation divided by **the square root of *n*.**

3. A sample containing the monthly returns for 75 U.S. stocks has a mean of 5% and a standard deviation of 12%. The standard error of the sample mean:

   A. Cannot be calculated given the information.

   B. Approximately equals 1.39%.

   C. Approximately equals 0.58%.

Answer: B

Standard error = 12/8.66 = 1.39

4. Which of the following is *least likely* a desirable characteristic of an estimator?

   A. Unbiasedness

   B. Efficiency

   C. Effectiveness

   Answer: C

   Effectiveness is not one of the desirable characteristics of an estimator.

5. Which of the following is *least likely* regarding a student's t-distribution?

   A. It has a lower peak and thinner tails than the normal distribution.

   B. It is defined by a single parameter, the degrees of freedom.

   C. It is symmetrical.

   Answer: A

   The t-distribution does have a lower peak, but has fatter or thicker tails compared to a normal distribution.

6. In which of the following scenarios should the z-distribution be used over the t-distribution?

   A. To construct confidence intervals for a *normally* (or approximately normally) distributed population whose variance is *unknown* when the sample size is small (n < 30).

   B. To construct confidence intervals for a *non-normally* distributed population whose variance is *known* and the sample size is *large* (n > 30).

   C. To construct confidence intervals for a *normally* distributed population whose variance is *unknown* if the sample size is *large* (n > 30).

   Answer: B

   When the population variance is *known*, the z-distribution should ideally be used.

7. Which of the following statements is *most likely*?

   A. A *larger* sample size results in a *smaller* standard error and *reduces* the width of the confidence interval.

   B. A *smaller* sample size results in a *larger* standard error and *reduces* the width of the confidence interval.

   C. A *smaller* sample size results in a *smaller* standard error and *reduces* the width of the confidence interval.

   Answer: A

   A *larger* sample size results in a *smaller* standard error and *reduces* the width of the confidence interval. A *smaller* sample size results in a *larger* standard error and *increases* the width of the confidence interval.

8. A sample of the monthly returns of ABC Stock over the last 3.5 years has a mean return of 0.5% and a standard deviation of 0.075%. The 95% confidence interval for the average monthly returns on ABC Stock is *closest to*?

   A. 0.4766% to 0.5234%

   B. 0.4773% to 0.5227%

   C. 0.4850% to 0.5150%

   Answer: A

   $n = 42$; $df = 41$; t-critical value (5% sig. level 2-tailed) = 2.0211; standard error = 0.01157. Therefore, the confidence interval is given as:

   $0.5 \pm 2.0211 \times 0.01157$

   Use the t-distribution as the population variance is not known and the sample size is large.

9. A sample of the monthly returns of ABC Stock over the last 4 years has a mean return of 0.8%. The standard deviation of monthly returns over ABC's entire history equals 0.025%. The 95% confidence interval for the average monthly returns on ABC Stock is *closest to*?

A. 0.7850% to 0.8150%

B. 0.7929% to 0.8071%

C. 0.7927% to 0.8073%

Answer: B

n = 48; z-critical value (5% sig. level 2-tailed) = 1.96; standard error = 0.00361 Therefore, the confidence interval is given as:

$0.8 \pm 1.96 \times 0.00361$

Use the z-distribution as the population variance is known.

10. The sampling distribution of a statistic is *most likely* made up of all possible:

    A. Sample statistics computed from samples of different sizes.

    B. Sample statistics computed from samples of the same size.

    C. Observations from the underlying population.

    Answer: B

    The sampling distribution of a statistic is made up of all possible sample statistics computed from samples of the **same** size.

11. If the data set used by a researcher includes data that were not available at the time the study was conducted, the data set being studied *most likely* suffers from:

    A. Look-ahead bias

    B. Survivorship bias

    C. Time-period bias

    Answer: A

    Look-ahead bias arises when a study uses information that was not available on the test date.

12. The probability (1-α) is *most likely* referred to as:

    A. Level of significance

    B. Confidence interval

    C. Degree of confidence

Answer: C

The probability (1 – α) is referred to as the confidence level while α refers to the significance level.

13. A simple random sample is *most likely*:

    A. One in which each member of the population has a greater than 1% chance of being chosen

    B. One in which each member of the population has an equal chance of being chosen

    C. One in which each member of the population has a 1% chance of being chosen

    Answer: B

14. Which of the following statements is *most accurate*?

    A. Sampling error is the distribution of all possible values of a sample statistic.

    B. Sampling error equals the difference between the sample statistic and the corresponding population parameter.

    C. Sampling error is the total difference between the sample statistic from one sample and the sample statistic from another sample.

    Answer: B

15. Data collected by observing several subjects at the same point in time is *most likely* referred to as:

    A. Cross-sectional data

    B. Time-series data

    C. Panel data

    Answer: A

    Time-series data consists of observations measured at uniform intervals over a period of time. Panel data refers to data collected over time about a single characteristic of multiple observational units.

16. Longitudinal data *most likely* refers to?

A. Data collected over time about a single characteristic of multiple observational units

B. Data collected over time about multiple characteristics of the same observational unit

C. Data collected over time about multiple characteristics of multiple observational units

Answer: B

Longitudinal data refers to data collected over time about multiple characteristics of the same observational unit.

17. The standard error of a sample that has an arithmetic mean of 11, a standard deviation of 3, and 20 observations is *closest to*:

A. 0.9

B. 0.67

C. 0.15

Answer: B

Standard error = $3 / 20^{0.5} = 0.67$.

18. Which of the following statements is *most accurate* regarding a student's t-distribution?

A. It is symmetrical.

B. It is defined by a single parameter, the degrees of freedom, where degrees of freedom equal sample size.

C. As the degrees of freedom increase, the t-distribution becomes less peaked and the tails become fatter.

Answer: A

The t-distribution is defined by a single parameter, the degrees of freedom, where degrees of freedom equal (**n – 1**).

As the degrees of freedom increase, the t-distribution curve becomes **more** peaked and the tails become **thinner.**

19. A sample of 100 students was selected from a school. The average points scored by these 100 students were 69. Assuming that the

distribution of scores of all students in this school is approximately normal, and given that the population standard deviation is 31, the 90% confidence interval is *closest to*?

A. 19.7 to 43.32

B. 63.9 to 74.1

C. 58.64 to 74.08

Answer: B

The population variance is known and the sample size is greater than 30, so we will use the z-values. The confidence interval is:

$69 - 1.645 (31 / \sqrt{100})$ to $69 + 1.645 (31 / \sqrt{100}) = 63.9$ to 74.1.

20. Ashley selected a sample of 20 stocks and calculated their mean return over a 3-year period to be 4.25%. Given that the sample standard deviation is 0.3% and assuming that the population is normally distributed, the 90% confidence interval is *closest to*:

A. 4.13% to 4.37%

B. 4.22% to 4.44%

C. 4.14% to 4.36%

Answer: A

Since the population variance is not known, but the population is assumed to be normally distributed, and the sample size is small we must use the t-distribution.

Standard error = $0.3 / (20)^{0.5} = 0.06708$

Degrees of freedom = $20 - 1 = 19$

For a 90% confidence interval, we need 5% in either tail. The relevant t-score with 19 degrees of freedom is 1.7291.

Confidence interval = $4.25\% \pm (1.7291 * 0.067\%) = 4.13\%$ to 4.37%

21. Brian selected a sample of 20 stocks and calculated their mean return for the year to be 6.3%. Given that the population standard deviation is 1.2% and that the population is normally distributed, the 90% confidence interval is *closest to*:

A. 5.86% to 6.74%

B. 5.78% to 6.83%

C. 5.84% to 6.76%

Answer: A

Since the population variance is known, the population is normally distributed, and the sample size is small, we must use the z-distribution.

Standard error = 1.2 / $(20)^{0.5}$ = 0.2683

For a 90% confidence interval, we need 5% in either tail. The relevant z-score is 1.645.

Confidence interval = 6.3% ± (1.645 * 0.2683%) = 5.86% to 6.74%.

22. Given that the sample size is less than 30, the population variance is known, and the population is not normally distributed, which of the following is *most likely*?

    A. The t-stat is the appropriate test statistic.

    B. The z-stat is the appropriate test statistic.

    C. Neither the z nor the t-stats can be used.

    Answer: C

    When studying a population that does not follow a normal distribution, neither the z nor the t-stat can be used if the sample size is less than 30.

23. Compared to simple random sampling, stratified random sampling *most likely*:

    A. Increases the size of the sample.

    B. Improves the representativeness of the sample.

    C. Increases the sampling error.

    Answer: B

    Stratified random sampling improves the representativeness of the sample and reduces sampling error.

24. A data set is examined extensively until a relationship that appears to be statistically significant is discovered. This *most likely* indicates that the study might suffer from:

A. Data mining bias

B. Sample selection bias

C. Look-ahead bias

Answer: A

Data mining bias is the practice of developing a model by extensively searching through a data set for statistically significant relationships until a pattern "that works" is discovered.

25. Which of the following will *least likely* result in a wider confidence interval?

A. Use of the z-distribution over the t-distribution

B. Use of a smaller sample size

C. Use of a lower significance level

Answer: A

- Use of the z-distribution over the t-distribution results in a narrower confidence interval.
- A smaller sample size increases standard error and increase the width of the confidence interval.
- A lower significance basically means a higher confidence level, which implies a wider interval.

Reading 11: Hypothesis Testing

1. Which of the following statements is *most likely* regarding a one-tailed hypothesis test where the alternate hypothesis is that the population mean is greater than the hypothesized mean?
   - A. Reject null when the test statistic is greater than the negative critical value.
   - B. Reject null when the test statistic is lower than the negative critical value.
   - C. Reject null when the test statistic is greater than the positive critical value.
2. Which of the following statements is *least likely*?
   - A. Decreasing the significance level increases the power of a hypothesis test.
   - B. Increasing the sample size increases the power of a hypothesis test.
   - C. Reducing the size of the “fail-to-reject-the-null region” increases the power of a hypothesis test.
3. Which of the following statements regarding the p-value is correct?
   - A. It is the maximum level of significance at which the null hypothesis is not rejected.
   - B. If the p-value is lower than the significance level, the null is accepted.
   - C. If the p-value is greater than the significance level, we fail to reject the null hypothesis.
4. A smaller sample size:
   - A. Reduces the size of the “fail-to-reject-the-null” region, reduces the probability of a Type II error, and increases the power of a test.
   - B. Increases the size of the “fail-to-reject-the-null” region, increases the probability of a Type II error, and reduces the power of a test.

C. Reduces the size of the "fail-to-reject-the-null" region, increases the probability of a Type II error, and reduces the power of a test.

5. To use the t-test with a pooled variance:

   A. The samples must be dependent.

   B. The variances must be assumed unequal.

   C. The populations must at least approximately follow the normal distribution.

6. To use the paired comparisons test:

   A. The samples must be dependent.

   B. The variances must be assumed equal.

   C. The chi-square stat must be calculated.

7. Which feature distinguishes the F-test from other hypothesis tests?

   A. The rejection region always lies in one tail.

   B. The rejection region always lies in the lower tail.

   C. There are no degrees of freedom for the F-test.

8. Which stat is *most likely* used to test the equality of the variances of two normally distributed, independent populations?

   A. Chi-square stat

   B. t-stat

   C. F-stat

9. Failure to reject an incorrect null hypothesis is a(n):

   A. Correct decision

   B. Incorrect decision (Type II error)

   C. Incorrect decision (Type I error)

10. The mean monthly return on a security over the past 32 weeks is 0.05% and the standard deviation of returns is 0.15%. The analyst wants to test whether this security's returns have been positive at the 5% level of significance. Based on this information which of the following is *most likely*?

	Hypothesis Test	Null hypothesis
A.	One-tailed test	$H_0: \mu_0 = 0$
B.	Two-tailed test	$H_0: \mu_0 > 0$
C.	One-tailed test	$H_0: \mu_0 \leq 0$

11. Suppose the p-value of a two-tailed hypothesis test is given as 0.02. Would the analyst reject the null hypothesis at the 5% and at the 1% level of significance?

	0.05	0.01
A.	Yes	Yes
B.	No	No
C.	Yes	No

Use the following information to answer Questions 12 to 17:

A manufacturer claims that the life of its batteries is normally distributed with a mean of 20 hours. For a random sample of 64 batteries, it is observed that the average life of the batteries in the sample is 19 hours with a standard deviation of 3.25 hours. Determine whether the average life of batteries manufactured by this company is greater than 20 hours at the 5% significance level.

12. The null hypothesis for this test would be structured as:

   A. $H_0: \mu_0 \leq 20$

   B. $H_0: \mu_0 > 20$

   C. $H_0: \mu_0 \geq 20$

13. The alternate hypothesis for this test would be structured as:

   A. $H_a: \mu_0 \leq 20$

   B. $H_a: \mu_0 > 20$

   C. $H_a: \mu_0 \geq 20$

14. This test is *most likely* an example of a:

A. One-tailed t-test

B. Two-tailed z-test

C. Two-tailed t-test

15. The test-statistic for this hypothesis test equals:

A. −2.462

B. −2.84

C. +2.84

16. Assuming that the t-distribution is used for this hypothesis test, the critical value(s) is/are:

A. −1.67

B. +1.67

C. −2.00 and +2.00

17. The conclusion of this test is that at the 5% significance level:

A. We fail to reject the null hypothesis.

B. We reject the null hypothesis.

C. We accept the alternate hypothesis.

Use the following information to answer Questions 18 to 23:

Test the accuracy of a claim made by AB Associates that the investment strategies they follow result in standard deviation of monthly returns of 0.58%. Use the 5% level of significance. ZX performance data for the last 31 months has a standard deviation of 0.55%.

18. The null hypothesis for this test would be structured as:

A. H_0: $\sigma^2 \leq 0.003364$

B. H_0: $\sigma^2 = 0.00003364$

C. H_0: $\sigma^2 = 0.0058$

19. The alternate hypothesis for this test would be structured as:

A. H_a: $\sigma^2 \neq 0.0058$

B. H_a: $\sigma^2 \neq 0.003364$

C. H_a: $\sigma^2 \neq 0.00003364$

20. This test is an example of a:

    A. One-tailed t-test

    B. Two-tailed chi-square test

    C. Two-tailed t-test

21. The test-statistic for this hypothesis test equals:

    A. 26.98

    B. 27.87

    C. 33.36

22. For this hypothesis test, the critical value(s) is/are:

    A. 43.77

    B. 16.79 and 46.98

    C. −2.04 and +2.04

23. The conclusion of this test is that at the 5% significance level:

    A. We fail to reject the null hypothesis.

    B. We accept the null hypothesis.

    C. We reject the null hypothesis.

24. Alexis is conducting research on the stock market of an emerging economy. She believes that the mean daily return on the market's all-share index is statistically significantly different from zero. She randomly selects 50 stocks that are traded on the country's stock exchange and calculates their average daily return to be 0.3%. The index that comprises all the shares in the country has a daily standard deviation of 0.2%. At the 5% level of significance, Alexis would *most likely*:

    A. Reject the null hypothesis, and conclude that the mean daily return is not statistically significantly different from zero

    B. Fail to reject the null hypothesis, and conclude that the mean daily return is not statistically significantly different from zero.

C. Reject the null hypothesis, and conclude that the mean daily return is statistically significantly different from zero.

25. Donald wants to determine whether, on an average, a player scores more than 10 goals in a season of soccer. He selects 40 players in his sample and calculates a sample mean of 11 goals a season. Given a population standard deviation of 3 goals a season, at the 5% level of significance Donald should *most likely*:

    A. Reject the null hypothesis, and conclude that a player scores more than 10 goals in a season of football.

    B. Fail to reject the null hypothesis, and conclude that a player does not score more than 10 goals in a season of football.

    C. Fail to reject the null hypothesis, and conclude that a player scores 10 goals or more in a season of football.

26. Timothy believes that Mark Johnson scores less than 50 runs on average every time he plays a cricket match. He selects a sample of 30 games and calculates a sample mean of 48 runs.

    The standard deviation of Johnson's scores throughout his entire career is given as 9 runs. At the 10% level of significance, Timothy would *most likely*:

    A. Reject the null hypothesis. He would conclude that Johnson scores 50 runs or more in any match.

    B. Fail to reject the null hypothesis. He would conclude that Johnson does not score less than 50 runs on average.

    C. Reject the null hypothesis, and conclude that Johnson scores 50 runs or more in any match.

27. Mike is testing whether a population's mean equals 25. He computes a t-stat of 1.71 based on a sample of 20 observations assuming that the population is normally distributed. At the 10% level of significance, Mike should *most likely*:

    A. Reject the null hypothesis, and conclude that the population mean is not significantly different from 25.

B. Reject the null hypothesis, and conclude that the population mean is significantly different from 25.

C. Fail to reject the null hypothesis that the population mean equals 25.

28. Zona is evaluating whether the average age of employees at a particular organization is greater than 30 years. She draws a sample of 100 employees and calculates their average age to be 31.1 years with a sample standard deviation of 6.3 years. At the 5% level of significance, Zona should *most likely*:

A. Reject the null hypothesis, and conclude that the average age is greater than 30 years.

B. Fail to reject the null hypothesis, and conclude that the average age is less than or equal to 30 years.

C. Fail to reject the null hypothesis, and conclude that the average age is greater than or equal to 30 years.

29. Carlos wants to test the hypothesis that a player scores 12 goals in a season of soccer. He selects 40 players and determines that these players average 13 goals a season. Assuming a population standard deviation of 4 goals, at the 10% level of significance Carlos should *most likely*:

A. Reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is different from 12.

B. Fail to reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is different from 12.

C. Fail to reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is 12.

Use the following information to answer Questions 30 to 33:

Alex is deciding between investing in 10 stocks with the highest dividend yields on the FTSE and investing in all 100 stocks in the FTSE 100. He calculated the following information based on data from the 30 years between 1980 and 2009:

Strategy	**Mean Return**	**Standard Deviation**

10 stocks with highest dividend yields	14.34%	17.40%
Buy-and-hold strategy on the FTSE 100	11.25%	15.42%
Difference	3.09%	5.52%

Alex is trying to determine whether the mean difference between the two strategies equals zero.

30. Which of the following *most accurately* describes the null and alternative hypothesis for this test?

   A. H_a: $\mu_d > 0$; H_0: $\mu_d \leq 0$

   B. H_0: $\mu_d = 0$; H_a: $\mu_d \neq 0$

   C. H_0: $\mu_d \neq 0$; H_a: $\mu_d = 0$

31. The test statistic stat for testing this hypothesis is *most likely*:

   A. z-stat

   B. t-stat

   C. F-stat

32. The rejection points for the hypothesis test at 10% level of significance are *closest to*:

   A. $t < -1.6973$ and $t > 1.6973$

   B. $t < -1.3114$ and $t > 1.3114$

   C. $t < -1.6991$ and $t > 1.6991$

33. Based on the calculated t-stat, Alex will *most likely*:

   A. Fail to reject the null hypothesis, and conclude that the difference in mean returns is not statistically significant.

   B. Reject the null hypothesis, and conclude that the difference in mean returns is statistically significant.

   C. Reject the null hypothesis, and conclude that the difference in mean returns is not statistically significant.

Use the following information to answer Questions 34 to 37:

Brian wants to investigate whether the population variance of returns on the FTSE 100 changed after the financial crisis of 2008. He gathered the following monthly returns information for 2 years before and after the crisis:

	Mean Monthly Return	**Variance of Returns**
Before the financial crisis	1.932%	20.436
After the financial crisis	1.214%	9.826

34. Which of the following *most accurately* describes the null and alternative hypothesis for this study?

    A. $H_0: \sigma^2_{Before} = \sigma^2_{After}$; $H_a: \sigma^2_{Before} \neq \sigma^2_{After}$

    B. $H_0: \sigma^2_{Before} \neq \sigma^2_{After}$; $H_a: \sigma^2_{Before} = \sigma^2_{After}$

    C. $H_0: \sigma^2_{Before} \geq \sigma^2_{After}$; $H_a: \sigma^2_{Before} < \sigma^2_{After}$

35. The test statistic for conducting this hypothesis test is *most likely*:

    A. z-stat

    B. t-stat

    C. F-stat

36. The critical value(s) for this test at the 5% level of significance is (are) *closest to*:

    A. 2.01

    B. 2.31

    C. ±35.17

37. Brian should *most likely*:

    A. Reject the null hypothesis, and conclude that the population variance of returns is the same in the pre and post-crisis periods.

    B. Fail to reject the null hypothesis, and conclude that the population variance of returns is not the same in the pre and post-crisis periods.

C. Fail to reject the null hypothesis, and conclude that the population variance of returns is the same in the pre- and post crisis periods.

Reading 11: Hypothesis Testing

1. Which of the following statements is *most likely* regarding a one-tailed hypothesis test where the alternate hypothesis is that the population mean is greater than the hypothesized mean?

   A. Reject null when the test statistic is greater than the negative critical value.

   B. Reject null when the test statistic is lower than the negative critical value.

   C. Reject null when the test statistic is greater than the positive critical value.

   Answer: C

   When trying to determine whether the population mean is greater than the hypothesized mean, you reject the null hypothesis when the test stat is **greater** than the positive critical value.

2. Which of the following statements is *least likely*?

   A. Decreasing the significance level increases the power of a hypothesis test.

   B. Increasing the sample size increases the power of a hypothesis test.

   C. Reducing the size of the "fail-to-reject-the-null region" increases the power of a hypothesis test.

   Answer: A

   Decreasing the significance level **increases** the probability of a Type II error, reduces the probability of a Type I error, and therefore, **reduces** the power of a test.

3. Which of the following statements regarding the p-value is correct?

   A. It is the maximum level of significance at which the null hypothesis is not rejected.

   B. If the p-value is lower than the significance level, the null is accepted.

C. If the p-value is greater than the significance level, we fail to reject the null hypothesis.

Answer: C

The p-value represents the lowest level of significance at which the null hypothesis can be rejected. If the p-value is greater than the significance level, we fail to reject the null hypothesis.

4. A smaller sample size:

A. Reduces the size of the "fail-to-reject-the-null" region, reduces the probability of a Type II error, and increases the power of a test.

B. Increases the size of the "fail-to-reject-the-null" region, increases the probability of a Type II error, and reduces the power of a test.

C. Reduces the size of the "fail-to-reject-the-null" region, increases the probability of a Type II error, and reduces the power of a test.

Answer: B

A smaller sample size increases the standard error. Therefore, it increases the size of the fail-to-reject-the-null region, increases the probability of a Type II error, and reduces the power of a hypothesis test.

5. To use the t-test with a pooled variance:

A. The samples must be dependent.

B. The variances must be assumed unequal.

C. The populations must at least approximately follow the normal distribution.

Answer: C

A t-test is used with a pooled variance when the populations are at least approximately normally distributed, the samples are **independent**, and their variances are assumed **equal.**

6. To use the paired comparisons test:

A. The samples must be dependent.

B. The variances must be assumed equal.

C. The chi-square stat must be calculated.

Answer: A

The paired comparisons test is used to test the mean of the difference between observations of two samples when they are **dependent.**

7. Which feature distinguishes the F-test from other hypothesis tests?

   A. The rejection region always lies in one tail.

   B. The rejection region always lies in the lower tail.

   C. There are no degrees of freedom for the F-test.

   Answer: A

   For an F-test, whether it is one-tailed or two-tailed, the rejection region always lies in the upper tail.

8. Which stat is *most likely* used to test the equality of the variances of two normally distributed, independent populations?

   A. Chi-square stat

   B. t-stat

   C. F-stat

   Answer: C

   When testing the equality of the variances of two populations, the F-test is used.

9. Failure to reject an incorrect null hypothesis is a(n):

   A. Correct decision

   B. Incorrect decision (Type II error)

   C. Incorrect decision (Type I error)

   Answer: B

   A Type II error is one where we fail to reject the null hypothesis when it is false.

10. The mean monthly return on a security over the past 32 weeks is 0.05% and the standard deviation of returns is 0.15%. The analyst wants to test whether this security's returns have been positive at the

5% level of significance. Based on this information which of the following is *most likely*?

	Hypothesis Test	Null hypothesis
A.	One-tailed test	$H_0: \mu_0 = 0$
B.	Two-tailed test	$H_0: \mu_0 > 0$
C.	One-tailed test	$H_0: \mu_0 \leq 0$

Answer: C

Since we are testing whether security returns are greater than zero (the alternate hypothesis), the null hypothesis for this test would be that security returns are lower than or equal to zero. This is an example of a one-tailed test.

11. Suppose the p-value of a two-tailed hypothesis test is given as 0.02. Would the analyst reject the null hypothesis at the 5% and at the 1% level of significance?

	0.05	0.01
A.	Yes	Yes
B.	No	No
C.	Yes	No

Answer: C

The p-value represents the lowest level of significance at which the null hypothesis can be rejected. A p-value of 0.02 means that the null hypothesis **can** be rejected at the 5% significance level, but not at the 1% significance level.

Use the following information to answer Questions 12 to 17:

A manufacturer claims that the life of its batteries is normally distributed with a mean of 20 hours. For a random sample of 64 batteries, it is observed that the average life of the batteries in the sample is 19 hours with a standard deviation of 3.25 hours. Determine whether the average life of batteries manufactured by this company is greater than 20 hours at the 5% significance level.

12. The null hypothesis for this test would be structured as:

    A. H_0: $\mu_0 \leq 20$

    B. H_0: $\mu_0 > 20$

    C. H_0: $\mu_0 \geq 20$

    Answer: A

13. The alternate hypothesis for this test would be structured as:

    A. H_a: $\mu_0 \leq 20$

    B. H_a: $\mu_0 > 20$

    C. H_a: $\mu_0 \geq 20$

    Answer: B

    The statement whose validity we are evaluating is whether the average life on the manufacturer's batteries is greater than 20 hours.

14. This test is *most likely* an example of a:

    A. One-tailed t-test

    B. Two-tailed z-test

    C. Two-tailed t-test

    Answer: A

    The sample size is large and this is a one-tailed test. The population variance is not known, so the t-test must be used.

15. The test-statistic for this hypothesis test equals:

    A. −2.462

    B. −2.84

    C. +2.84

    Answer: A

    Test-statistic = $(19 - 20) / (3.25/8) = -2.462$

16. Assuming that the t-distribution is used for this hypothesis test, the critical value(s) is/are:

A. −1.67

B. +1.67

C. −2.00 and +2.00

Answer: B

Since we are testing whether the average life of the batteries is **greater** than 20 hours, the relevant critical value for this test equals +1.67 at the 5% significance level.

17. The conclusion of this test is that at the 5% significance level:

 A. We fail to reject the null hypothesis.

 B. We reject the null hypothesis.

 C. We accept the alternate hypothesis.

 Answer: A

 Since the test is statistic lower than the critical t-value for this test, we **fail** to reject the null hypothesis.

Use the following information to answer Questions 18 to 23:

Test the accuracy of a claim made by AB Associates that the investment strategies they follow result in standard deviation of monthly returns of 0.58%. Use the 5% level of significance. ZX performance data for the last 31 months has a standard deviation of 0.55%.

18. The null hypothesis for this test would be structured as:

 A. $H_0: \sigma^2 \leq 0.003364$

 B. $H_0: \sigma^2 = 0.00003364$

 C. $H_0: \sigma^2 = 0.0058$

 Answer: B

 The status quo is that the variance of returns equals $(0.0058)^2$ or 0.00003364.

19. The alternate hypothesis for this test would be structured as:

 A. $H_a: \sigma^2 \neq 0.0058$

B. H_a: $\sigma^2 \neq 0.003364$

C. H_a: $\sigma^2 \neq 0.00003364$

Answer: C

The statement whose validity we are trying to establish is whether the variance of monthly returns is different from 0.00003364.

20. This test is an example of a:

A. One-tailed t-test

B. Two-tailed chi-square test

C. Two-tailed t-test

Answer: B

A two-tailed chi-square test is used to determine whether the variance of a population is different from the given variance.

21. The test-statistic for this hypothesis test equals:

A. 26.98

B. 27.87

C. 33.36

Answer: A

The chi-square test statistic equals $[(31-1)(0.0055)^2] / (0.0058)^2$

22. For this hypothesis test, the critical value(s) is/are:

A. 43.77

B. 16.79 and 46.98

C. −2.04 and +2.04

Answer: B

23. The conclusion of this test is that at the 5% significance level:

A. We fail to reject the null hypothesis.

B. We accept the null hypothesis.

C. We reject the null hypothesis.

Answer: A

Since the test statistic lies between the critical values, we fail to reject the null hypothesis.

24. Alexis is conducting research on the stock market of an emerging economy. She believes that the mean daily return on the market's all-share index is statistically significantly different from zero. She randomly selects 50 stocks that are traded on the country's stock exchange and calculates their average daily return to be 0.3%. The index that comprises all the shares in the country has a daily standard deviation of 0.2%. At the 5% level of significance, Alexis would *most likely*:

    A. Reject the null hypothesis, and conclude that the mean daily return is not statistically significantly different from zero.

    B. Fail to reject the null hypothesis, and conclude that the mean daily return is not statistically significantly different from zero.

    C. Reject the null hypothesis, and conclude that the mean daily return is statistically significantly different from zero.

    Answer: C

    H_0: $\mu = 0$; H_a: $\mu \neq 0$

    Since the population (index comprising of all shares traded in the country) standard deviation is known, use the z-test.

    This is a two-tailed test. At the 5% level of significance, the critical z-values for a two-tailed test are ± 1.96.

    Test stat = $\{(0.003 - 0) / [(0.002) / (50)^{0.5}]\} = 10.607$

    Since the test stat (10.607) is greater than the upper critical value (+1.96), the null hypothesis is rejected. Alexis would conclude that the mean daily return is statistically significantly different from zero.

25. Donald wants to determine whether, on an average, a player scores more than 10 goals in a season of soccer. He selects 40 players in his sample and calculates a sample mean of 11 goals a season. Given a population standard deviation of 3 goals a season, at the 5% level of significance Donald should *most likely*:

A. Reject the null hypothesis, and conclude that a player scores more than 10 goals in a season of football.

B. Fail to reject the null hypothesis, and conclude that a player does not score more than 10 goals in a season of football.

C. Fail to reject the null hypothesis, and conclude that a player scores 10 goals or more in a season of football.

Answer: A

H_0: $\mu \geq 10$; H_a: $\mu > 10$

Since the population variance is known, use the z-test.

This is a one-tailed, upper tail test. At the 5% level of significance, the critical z-value for a one-tailed test is 1.645.

Test stat = $\{(11 - 10) / [(3 / (40)^{0.5}]\} = 2.108$

Since the test stat (2.108) is greater than the critical z-value (1.645), the null hypothesis is rejected. Donald would conclude that on an average, a player scores more than 10 goals in a season of football.

26. Timothy believes that Mark Johnson scores less than 50 runs on average every time he plays a cricket match. He selects a sample of 30 games and calculates a sample mean of 48 runs. The standard deviation of Johnson's scores throughout his entire career is given as 9 runs. At the 10% level of significance, Timothy would *most likely*:

A. Reject the null hypothesis. He would conclude that Johnson scores 50 runs or more in any match.

B. Fail to reject the null hypothesis. He would conclude that Johnson does not score less than 50 runs on average.

C. Reject the null hypothesis, and conclude that Johnson scores 50 runs or more in any match.

Answer: B

H_0: $\mu \geq 50$; H_a: $\mu < 50$

Since the population variance is known, use the z-test.

This is a one-tailed, lower tail test. At the 10% level of significance, the critical z-value for a one-tailed test is -1.285.

Test stat = $\{(48 - 50) / [(9 / (30)^{0.5}]\} = -1.217$

Since the test stat (−1.217) is greater than the critical z-value (−1.285), Timothy would fail to reject the null hypothesis. He would conclude that Johnson does not score less than 50 runs on an average.

27. Mike is testing whether a population's mean equals 25. He computes a t-stat of 1.71 based on a sample of 20 observations assuming that the population is normally distributed. At the 10% level of significance, Mike should *most likely*:

    A. Reject the null hypothesis, and conclude that the population mean is not significantly different from 25.

    B. Reject the null hypothesis, and conclude that the population mean is significantly different from 25.

    C. Fail to reject the null hypothesis that the population mean equals 25.

    Answer: C

    H_0: $\mu = 25$; H_a: $\mu \neq 25$

    This is a two-tailed test. At the 10% level of significance, the critical t-values for a two-tailed test given 19 degrees of freedom are −1.7291 and +1.7291.

    Since the t-stat of 1.71 is less than the upper critical t-value (+1.7291), Mike should fail to reject the null hypothesis. He would conclude that the population mean is not statistically significantly different from 25.

28. Zona is evaluating whether the average age of employees at a particular organization is greater than 30 years. She draws a sample of 100 employees and calculates their average age to be 31.1 years with a sample standard deviation of 6.3 years. At the 5% level of significance, Zona should *most likely*:

    A. Reject the null hypothesis, and conclude that the average age is greater than 30 years.

    B. Fail to reject the null hypothesis, and conclude that the average age is less than or equal to 30 years.

    C. Fail to reject the null hypothesis, and conclude that the average age is greater than or equal to 30 years.

Answer: A

H_0: $\mu < 30$; H_a: $\mu > 30$

Since the variance of the population is not known and the sample size is large (150), we will use the t-test.

T-stat $=\{(31.1 - 30)/ [(6.3) / (100)^{0.5}]\} = 1.746$

This is a one-tailed test. At the 5% level of significance, the critical t-value for a one-tailed test and 99 degrees of freedom is 1.66.

Since the test-stat (1.746) is greater than the critical t-value (1.66), the null hypothesis is rejected. Zona should conclude that the average age of employees in the organization is greater than 30 years.

29. Carlos wants to test the hypothesis that a player scores 12 goals in a season of soccer. He selects 40 players and determines that these players average 13 goals a season. Assuming a population standard deviation of 4 goals, at the 10% level of significance Carlos should *most likely*:

   A. Reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is different from 12.

   B. Fail to reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is different from 12.

   C. Fail to reject the null hypothesis, and conclude that the number of goals scored by a player in a season of football is 12.

   Answer: C

   H_0: $\mu = 12$; H_a: $\mu \neq 12$

   Since the population variance is known, use the z-test.

   This is a two-tailed test. At the 10% level of significance, the critical z-values for a two-tailed test are ±1.645.

   Test stat $=\{13 - 12/ [(4) / (40)^{0.5}]\} = 1.581$

   Since the test stat (1.581) is less than the upper critical z-value (+1.645), Carlos should fail to reject the null hypothesis. He should conclude that the number of goals scored by a player on average in a season of football equals 12.

Use the following information to answer Questions 30 to 33:

Alex is deciding between investing in 10 stocks with the highest dividend yields on the FTSE and investing in all 100 stocks in the FTSE 100. He calculated the following information based on data from the 30 years between 1980 and 2009:

Strategy	**Mean Return**	**Standard Deviation**
10 stocks with highest dividend yields	14.34%	17.40%
Buy-and-hold strategy on the FTSE 100	11.25%	15.42%
Difference	3.09%	5.52%

Alex is trying to determine whether the mean difference between the two strategies equals zero.

30. Which of the following *most accurately* describes the null and alternative hypothesis for this test?

    A. $H_a: \mu_d > 0$; $H_0: \mu_d \leq 0$

    B. $H_0: \mu_d = 0$; $H_a: \mu_d \neq 0$

    C. $H_0: \mu_d \neq 0$; $H_a: \mu_d = 0$

    Answer: B

31. The test statistic stat for testing this hypothesis is *most likely*:

    A. z-stat

    B. t-stat

    C. F-stat

    Answer: B

    Since the population variance is unknown, the test statistic is a t-test with

30 − 1 = 29 degrees of freedom.

32. The rejection points for the hypothesis test at 10% level of significance are *closest to*:

    A. t < −1.6973 and t > 1.6973

    B. t < −1.3114 and t > 1.3114

    C. t < −1.6991 and t > 1.6991

    Answer: C

    The critical t-values based on a two-tailed test with 29 degrees of freedom at the 10% level of significance are −1.6991 and + 1.6991

    Therefore, we will reject the null hypothesis if: t > 1.6991 or t < −1.6991.

33. Based on the calculated t-stat, Alex will *most likely*:

    A. Fail to reject the null hypothesis, and conclude that the difference in mean returns is not statistically significant.

    B. Reject the null hypothesis, and conclude that the difference in mean returns is statistically significant.

    C. Reject the null hypothesis, and conclude that the difference in mean returns is not statistically significant.

    Answer: B

    The paired comparisons test is appropriate here because the 10 highest dividend yielding stocks in the FTSE 100 and all the shares in the FTSE 100 are not independent samples as the correlations of returns on the two strategies should be positive.

    $\text{t-stat} = 3.09 / [5.52 / (30)^{0.5}] = 3.067$

    Since the calculated t-stat (3.067) is greater than the positive critical t-value (1.6991), Alex should reject the null hypothesis. He should conclude that the difference in mean returns is statistically significant.

Use the following information to answer Questions 34 to 37:

Brian wants to investigate whether the population variance of returns on the FTSE 100 changed after the financial crisis of 2008. He gathered the following monthly returns information for 2 years before and after the crisis:

	Mean Monthly Return	**Variance of Returns**
Before the financial crisis	1.932%	20.436
After the financial crisis	1.214%	9.826

34. Which of the following *most accurately* describes the null and alternative hypothesis for this study?

A. H_0: $\sigma^2_{Before} = \sigma^2_{After}$; H_a: $\sigma^2_{Before} \neq \sigma^2_{After}$

B. H_0: $\sigma^2_{Before} \neq \sigma^2_{After}$; H_a: $\sigma^2_{Before} = \sigma^2_{After}$

C. H_0: $\sigma^2_{Before} \geq \sigma^2_{After}$; H_a: $\sigma^2_{Before} < \sigma^2_{After}$

Answer: A

Use the following information to answer Questions 34 to 37:

Brian wants to investigate whether the population variance of returns on the FTSE 100 changed after the financial crisis of 2008. He gathered the following monthly returns information for 2 years before and after the crisis:

	Mean Monthly Return	**Variance of Returns**
Before the financial crisis	1.932%	20.436
After the financial crisis	1.214%	9.826

35. The test statistic for conducting this hypothesis test is *most likely*:

A. z-stat

B. t-stat

C. F-stat

Answer: C

To test a hypothesis regarding the equality of variances of two independent populations, we use the F-stat.

36. The critical value(s) for this test at the 5% level of significance is (are) *closest to*:

A. 2.01

B. 2.31

C. ±35.17

Answer: B

Degrees of freedom for the numerator = 24 – 1 = 23

Degrees of freedom for the denominator = 24 – 1=23.

Even though this is a two-tailed test, the rejection region for an F-test lies in only one tail.

The critical value from the F-table is 2.31.

37. Brian should *most likely*:

A. Reject the null hypothesis and conclude that the population variance of returns is the same in the pre and post-crisis periods.

B. Fail to reject the null hypothesis and conclude that the population variance of returns is not the same in the pre and post-crisis periods.

C. Fail to reject the null hypothesis and conclude that the population variance of returns is the same in the pre- and post- crisis periods.

Answer: C

F-stat = s_1^2/s_2^2 = 20.436 / 9.826 = 2.08

Since the calculated F-stat is less than the critical value, Brian should fail to reject the null hypothesis. He should conclude that the variance of returns in the pre- and post- crisis periods is not statistically different.

Reading 12: Technical Analysis

1. Which of the following statements regarding technical analysis is *least accurate*?
   A. It requires an in-depth knowledge of the security being analyzed.
   B. It can be used in any global freely-traded market.
   C. It can be performed relatively quickly.
2. Technical analysis can *most likely* be applied to identify:
   A. Short-term trends only.
   B. Long-term trends only.
   C. Both short-term and long-term trends.
3. Which of the following statements regarding technical and fundamental analysts is *most accurate*?

	Fundamental analysts assert that:	**Technical analysts assert that:**
A	Investors are irrational.	Markets are efficient and rational.
B	Markets are efficient and rational.	Investors tend to behave similarly in similar circumstances.
C	Investment decisions are primarily driven by psychological factors.	Security price movements occur before fundamental developments occur.

4. Which of the following statements regarding technical and fundamental analysis is *least accurate*?

	Fundamental analysis	**Technical analysis**
A	Uses data which is subject to manipulation.	Uses data which is more concrete and reliable.
B	Has been in use for a relatively longer period in investment decision-making.	Incorporates social and political variables.

C	Aims to determine the theoretical long-term (intrinsic) value of a security.	Studies actual trading patterns to evaluate the trend in market price of a security.

5. Which of the following is *least likely* a drawback of technical analysis?

   A. Market movements and trends can change without warning.

   B. It cannot be used in liquid markets.

   C. Technical analysts might miss a change in investor psychology.

6. Nicholas is interested in the price volatility in the DJIA in the month of February. He is *least likely* to refer to:

   A. Bar charts.

   B. Point and figure charts.

   C. Candlestick charts.

7. Consider the following statements:

   Statement 1: In a candlestick chart, if the body of the candle is shaded, it means that the closing price was higher than the opening price.

   Statement 2: In a bar chart, a cross-hatch to the left indicates the closing price, while a cross-hatch to the right indicates the opening price.

   Which of the following is *most likely*?

   A. Only one statement is incorrect.

   B. Both statements are correct.

   C. Both statements are incorrect.

8. An analyst wants to construct a point and figure chart for a security and gathers the following information:

   Price on Day 1: $32

   Price on Day 2: $33

   Price on Day 3: $35

   Price on Day 4: $32

Price on Day 5: $31.50

Price on Day 6: $30

Price on Day 7: $28

Given a box size of $1 and a reversal size of $3, the analyst will *most likely*:

A. Plot three Xs in the first column and four Os in the second column.

B. Plot three Xs in the first column and three Os in the second column.

C. Plot two Xs in the first column and five Os in the second column.

9. At the support level, technicians believe that investors *most likely*:

A. Generate enough selling activity to prevent any further increase in price.

B. Believe that the security is an attractive investment.

C. Believe that the security is overpriced.

10. An inverse head and shoulders pattern *most likely* indicates that prices are expected to:

A. Decline.

B. Rise.

C. Follow the same trend that preceded the pattern.

11. An analyst plotted a security's price over time and observed a head and shoulders pattern. She noted the following prices from the graph:

Low during head = $94

Low during shoulders = $87

Neckline = $79

The security's estimated price target is *closest to*:

A. $64

B. $72

C. $71

12. An analyst plotted a security's price over time and observed an inverse head and shoulders pattern. She noted the following prices from the graph:

    High during head = \$91

    High during shoulders = \$105

    Neckline = \$113

    The security's estimated price target is *closest to*:

    A. \$121

    B. \$127

    C. \$135

13. Which of the following is *least likely* a continuation pattern?

    A. Triple top

    B. Symmetrical triangle

    C. Pennant

14. An analyst plotted a stock's price over time and decided to write call options on the stock. He *most likely* observed a(n):

    A. Double bottom pattern.

    B. Ascending triangle pattern.

    C. Head and shoulders pattern.

15. An analyst plotted a stock's price over time and observed a descending triangle. She should *most likely*:

    A. Purchase call options on the company's stock.

    B. Write put options on the company's stock.

    C. Purchase put options on the company's stock.

16. Which of the following statements regarding moving averages is *least accurate*?

    A. They smooth out short-term price fluctuations.

    B. The longer the time frame used in their creation, the more volatile the line.

C. A stock that is in an uptrend tends to trade above its moving average.

17. When the long-term moving average intersects the short-term moving average from below, it is referred to as a:

    A. Golden cross.

    B. Silver cross.

    C. Dead cross.

18. Which of the following statements regarding a strategy based on Bollinger bands is *most accurate*?

    A. A contrarian would buy a security when its price reaches the upper band, whereas a long-term investor would only buy on a significant breakout above the upper band.

    B. A contrarian would sell a security when its price reaches the upper band, whereas a long-term investor would only sell on a significant breakout below the lower band.

    C. A contrarian would sell a security when its price reaches the upper band, whereas a long-term investor would only sell on a significant breakout above the upper band.

19. Consider the following statements:

    Statement 1: Momentum oscillators can be used to make long-term trading decisions in nontrending markets.

    Statement 2: Momentum oscillators may signal a trend reversal when they reach historical highs or lows.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

20. When observing Stochastic oscillators, a trader should *most likely* sell a security when:

    A. The %D line crosses %K line from below.

B. Its value is lower than 20.

C. The %D line crosses %K line from above.

21. The moving average convergence/divergence oscillator is *most likely* calculated as:

    A. Moving average plus specific number of standard deviations from the moving average and minus a specific number of standard deviations from the moving average.

    B. The difference between the short-term and long-term moving averages of a security's price.

    C. The sum of all the up changes during the period under consideration divided by the sum of all the down changes during the period under consideration.

22. Which of the following is *least likely* a sentiment indicator?

    A. Put/call ratio

    B. Arms index

    C. Short interest ratio

23. Which of the following *least likely* suggests that the market will decline?

    A. A rise in the CBOE Volatility Index

    B. A high put-call ratio

    C. An Arms Index value of less than 1

24. A high short interest ratio *most likely* indicates that a security's price:

    A. Is expected to rise.

    B. Is expected to decline.

    C. May either rise or decline.

25. Based on the Presidential cycle, the best stock market performance is *most likely* to occur in the:

    A. First year of the U.S. Presidential term.

    B. Third year of the U.S. Presidential term.

C. Fourth year of the U.S. Presidential term.

26. Based on the relationships that have been observed between different asset classes, commodity prices are *most likely* to rise when:

    A. Stock prices rise.

    B. The dollar strengthens.

    C. Bond prices decline.

Reading 12: Technical Analysis

1. Which of the following statements regarding technical analysis is *least accurate*?

   A. It requires an in-depth knowledge of the security being analyzed.

   B. It can be used in any global freely-traded market.

   C. It can be performed relatively quickly.

   Answer: A

   Technical analysis does not require an in-depth knowledge of the security being analyzed.

2. Technical analysis can *most likely* be applied to identify:

   A. Short-term trends only.

   B. Long-term trends only.

   C. Both short-term and long-term trends.

   Answer: C

   Technical analysis can be used to identify short-term and long-term trends.

3. Which of the following statements regarding technical and fundamental analysts is *most accurate*?

	Fundamental analysts assert that:	**Technical analysts assert that:**
A	Investors are irrational.	Markets are efficient and rational.
B	Markets are efficient and rational.	Investors tend to behave similarly in similar circumstances.
C	Investment decisions are primarily driven by psychological factors.	Security price movements occur before fundamental developments occur.

   Answer: B

Fundamental analysts assert that markets are efficient and rational, but technicians believe that people often behave in an irrational and emotional manner, and tend to behave similarly in similar circumstances.

4. Which of the following statements regarding technical and fundamental analysis is *least accurate*?

	Fundamental Analysis	**Technical Analysis**
A	Uses data which is subject to manipulation.	Uses data which is more concrete and reliable.
B	Has been in use for a relatively longer period in investment decision-making.	Incorporates social and political variables.
C	Aims to determine the theoretical long-term (intrinsic) value of a security.	Studies actual trading patterns to evaluate the trend in market price of a security.

Answer: B

Technical analysis has been in use for a relatively longer period in investment decision-making. It only uses trading data, which includes market price and volume information.

Fundamental analysis uses external information and also incorporates social and political variables.

5. Which of the following is *least likely* a drawback of technical analysis?

A. Market movements and trends can change without warning.

B. It cannot be used in liquid markets.

C. Technical analysts might miss a change in investor psychology.

Answer: B

Application of technical analysis is limited in illiquid markets, where even a modest trade may have a relatively significant price impact.

6. Nicholas is interested in the price volatility in the DJIA in the month of February. He is *least likely* to refer to:

A. Bar charts.

B. Point and figure charts.

C. Candlestick charts.

Answer: B

Point and figure charts ignore short-term price volatility or noise that does not alter the long-term trend.

7. Consider the following statements:

Statement 1: In a candlestick chart, if the body of the candle is shaded, it means that the closing price was higher than the opening price.

Statement 2: In a bar chart, a cross-hatch to the left indicates the closing price, while a cross-hatch to the right indicates the opening price.

Which of the following is *most likely*?

A. Only one statement is incorrect.

B. Both statements are correct.

C. Both statements are incorrect.

Answer: C

In a candlestick chart, if the body of the candle is shaded, it means that the closing price was lower than the opening price.

In a bar chart, a cross-hatch to the left indicates opening price, while a cross-hatch to the right indicates the closing price.

8. An analyst wants to construct a point and figure chart for a security and gathers the following information:

Price on Day 1: $32

Price on Day 2: $33

Price on Day 3: $35

Price on Day 4: $32

Price on Day 5: $31.50

Price on Day 6: $30

Price on Day 7: $28

Given a box size of $1 and a reversal size of $3, the analyst will *most likely*:

A. Plot three Xs in the first column and four Os in the second column.

B. Plot three Xs in the first column and three Os in the second column.

C. Plot two Xs in the first column and five Os in the second column.

Answer: A

Days	Price ($)	Price Change ($)	Implication
1	32		
2	33	+1	1 X
3	35	+2	2 Xs
4	32	−3	1 O in the next column
5	31.50	−0.5	
6	30	−1.5	1 O
7	28	−2	2 Os

9. At the support level, technicians believe that investors *most likely*:

A. Generate enough selling activity to prevent any further increase in price.

B. Believe that the security is an attractive investment.

C. Believe that the security is overpriced.

Answer: B

A support level is defined as the price at which there is sufficient buying interest in the stock to arrest the price decline. At this level, investors believe that the security is an attractive investment despite the recent price decline.

10. An inverse head and shoulders pattern *most likely* indicates that prices are expected to:

A. Decline.

B. Rise.

C. Follow the same trend that preceded the pattern.

Answer: B

The inverse head and shoulders pattern is a reversal pattern. Once an inverse head and shoulders pattern has formed, prices are expected to rise (the downtrend that preceded the head and shoulders pattern is expected to reverse).

11. An analyst plotted a security's price over time and observed a head and shoulders pattern. She noted the following prices from the graph:

Low during head = $94

Low during shoulders = $87

Neckline = $79

The security's estimated price target is *closest to*:

A. $64

B. $72

C. $71

Answer: A

Price target = Neckline – (Head – Neckline)

Price target = 79 – (94 – 79) = $64

12. An analyst plotted a security's price over time and observed an inverse head and shoulders pattern. She noted the following prices from the graph:

High during head = $91

High during shoulders = $105

Neckline = $113

The security's estimated price target is *closest to*:

A. $121

B. $127

C. $135

Answer: C

Price target = Neckline + (Neckline – Head)

Price target = 113 + (113 – 91) = $135

13. Which of the following is *least likely* a continuation pattern?

    A. Triple top

    B. Symmetrical triangle

    C. Pennant

    Answer: A

    Triple tops and bottoms are reversal patterns.

14. An analyst plotted a stock's price over time and decided to write call options on the stock. He *most likely* observed a(n):

    A. Double bottom pattern.

    B. Ascending triangle pattern.

    C. Head and shoulders pattern.

    Answer: C

    The analyst wrote call options on the stock, which implies that he expects its price to decline in the future.

    - A double bottom indicates the reversal of a downtrend.
    - An ascending triangle is a continuation pattern and indicates that prices are expected to rise.
    - Once a head and shoulders pattern has formed, prices are expected to decline.

15. An analyst plotted a stock's price over time and observed a descending triangle. She should *most likely*:

    A. Purchase call options on the company's stock.

    B. Write put options on the company's stock.

    C. Purchase put options on the company's stock.

    Answer: C

A descending triangle is a continuation pattern which indicates that prices are expected to decline. The analyst would therefore purchase put options on the company's stock.

16. Which of the following statements regarding moving averages is *least accurate*?

    A. They smooth out short-term price fluctuations.

    B. The longer the time frame used in their creation, the more volatile the line.

    C. A stock that is in an uptrend tends to trade above its moving average.

    Answer: B

    The longer the time frame used in the creation of a moving average, the smoother and less volatile the line.

17. When the long-term moving average intersects the short-term moving average from below, it is referred to as a:

    A. Golden cross.

    B. Silver cross.

    C. Dead cross.

    Answer: C

    When the short-term moving average intersects the long-term moving average from above, it is referred to as a dead cross.

18. Which of the following statements regarding a strategy based on Bollinger bands is *most accurate*?

    A. A contrarian would buy a security when its price reaches the upper band, whereas a long-term investor would only buy on a significant breakout above the upper band.

    B. A contrarian would sell a security when its price reaches the upper band, whereas a long-term investor would only sell on a significant breakout below the lower band.

    C. A contrarian would sell a security when its price reaches the upper band, whereas a long-term investor would only sell on a significant breakout above the upper band.

Answer: B

A contrarian technical strategy based on Bollinger bands aims to sell the security when it reaches the upper band and purchase the security when it touches the lower band. On the other hand, a long-term investor may purchase the security once it has broken out significantly above the upper band, or short the security once it has fallen significantly below the lower band.

19. Consider the following statements:

Statement 1: Momentum oscillators can be used to make long-term trading decisions in nontrending markets.

Statement 2: Momentum oscillators may signal a trend reversal when they reach historical highs or lows.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: A

Only Statement 2 is correct.

Momentum oscillators can be used to make short-term trading decisions in nontrending markets.

20. When observing Stochastic oscillators, a trader should *most likely* sell a security when:

A. The %D line crosses %K line from below.

B. Its value is lower than 20.

C. The %D line crosses %K line from above.

Answer: C

When the %D line crosses %K line from above it is a bearish signal.

21. The moving average convergence/divergence oscillator is *most likely* calculated as:

A. Moving average plus specific number of standard deviations from the moving average and minus a specific number of standard deviations from the moving average.

B. The difference between the short-term and long-term moving averages of a security's price.

C. The sum of all the up changes during the period under consideration divided by the sum of all the down changes during the period under consideration.

Answer: B

The moving average convergence/divergence oscillator is calculated as the difference between the short-term and long-term moving average of a security's price.

Bollinger bands consist of a simple moving average plus upper and lower bands that are calculated by adding and subtracting a specific number of standard deviations from the moving average.

The relative strength in a relative strength index is calculated as the sum of all the up changes for the period under consideration divided by the sum of all the down changes during the period under consideration.

22. Which of the following is *least likely* a sentiment indicator?

A. Put/call ratio

B. Arms index

C. Short interest ratio

Answer: B

The Arms index is a flow of funds indicator.

23. Which of the following *least likely* suggests that the market will decline?

A. A rise in the CBOE Volatility Index

B. A high put-call ratio

C. An Arms index value of less than 1

Answer: C

A high put-call ratio indicates that the market is bearish, while a low ratio suggests that the market is bullish.

A rise in the CBOE Volatility Index is a bearish indicator.

An Arms index value of less than 1 indicates that there is more activity in advancing stocks and that market sentiment is currently bullish.

24. A high short interest ratio *most likely* indicates that a security's price:

A. Is expected to rise.

B. Is expected to decline.

C. May either rise or decline.

Answer: C

Short interest ratio may be interpreted in two ways. A high ratio may either suggest that:

- There is overall a negative outlook on the security and one should expect the price to decline; or
- The effect of short sales has already been factored into the current market price. When these short sellers cover their positions, the price of the stock will rise.

25. Based on the Presidential cycle, the best stock market performance is *most likely* to occur in the:

A. First year of the U.S. Presidential term.

B. Third year of the U.S. Presidential term.

C. Fourth year of the U.S. Presidential term.

Answer: B

Historically, it has been observed that the third year (of the four-year U.S. Presidential term) boasts the best stock market performance.

26. Based on the relationships that have been observed between different asset classes, commodity prices are *most likely* to rise when:

A. Stock prices rise.

B. The dollar strengthens.

C. Bond prices decline.

Answer: C

- Stock prices and bond prices tend to move in the same direction. Therefore, rising bond prices are a positive for stocks.
- Declining bond prices are a signal of commodity prices possibly rising.
- A strong dollar usually results in lower commodity prices.

Economics

Reading 13: Demand and Supply Analysis: Introduction

1. The demand function for orange juice is given as: QD = 50 – 4P

   The y-intercept of the demand curve is *closest to*:

   A. 50

   B. 12.5

   C. 200

2. For any particular good, an increase in the price of a complement would *most likely* result in:

   A. A movement along the demand curve to the right.

   B. A shift in the demand curve to the left.

   C. A shift in the demand curve to the right.

3. An individual's demand function for a good is given by QD = 40 – 10P. If there were 100 such individuals in the market, the slope of the market demand curve would be *closest to*:

   A. −10

   B. −1000

   C. −0.001

4. Which of the following is *least likely* an exogenous variable in demand and supply analysis?

   A. Own price

   B. Wages

   C. Income

5. When demand and supply are downward sloping and demand intersects supply from below, the resulting equilibrium is *most likely*:

   A. Partial equilibrium.

B. Stable equilibrium.

C. Unstable equilibrium.

6. If supply is upward sloping and demand is downward sloping and supply intersects demand from below, the resulting equilibrium is *most likely*:

   A. Partial equilibrium.

   B. Stable equilibrium.

   C. Unstable equilibrium.

7. Which of the following types of actions is *most likely* to result in a seller having to sell the asset for the relatively low price?

   A. First price sealed bid auction

   B. Vickery auction

   C. Dutch auction

8. Consider the following statements:

   Statement 1: If close substitutes are easily available for a particular good, own-price elasticity of demand for the good will be relatively high.

   Statement 2: If a relatively large proportion of a person's income is spent on a particular good, own-price elasticity of demand for that good is most likely relatively high.

   Which of the following is *most likely*?

   A. Both statements are incorrect.

   B. Both statements are correct.

   C. Only one statement is correct.

9. Consider the following statements:

   Statement 1: For a normal good, income elasticity of demand is always positive.

   Statement 2: For an inferior good, income elasticity of demand is always negative.

Which of the following is *most likely*:

A. Both statements are incorrect.

B. Both statements are correct.

C. Only one statement is correct.

10. For which of the following goods will a decrease in income *most likely* lead to a consumer spending a lower proportion of her income on the good?

    A. A good for which income elasticity of demand equals +1.5

    B. A good for which income elasticity of demand equals −1.5

    C. A good for which income elasticity of demand equals +0.5

11. Consider the following statements:

    Statement 1: If price elasticity of demand for a good equals 1.25, an increase in price will result in a decrease in total revenue.

    Statement 2: If a decrease in price leads to a decrease in total revenue, demand for the good is price elastic.

    Which of the following is *most likely*:

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are incorrect.

12. In response to an increase in price from $3.50 to $4.20, the quantity demanded for a product falls from 120 to 90 units. Which of the following is *most likely* regarding the value and interpretation of arc elasticity of demand for the good?

	Value	**Interpretation**
A.	−1.57	Inelastic
B.	−1.25	Elastic
C.	−1.57	Elastic

13. For a linear demand curve, at the price where elasticity equals 2.5, decreasing prices will *most likely*:

A. Increase total revenue.

B. Have no effect on total revenue.

C. Decrease total revenue.

14. When a rent ceiling is imposed below the equilibrium market price, which of the following is *most likely*?

A. Price falls while quantity increases.

B. Price rises while quantity falls.

C. Price and quantity both fall.

15. When a rent ceiling is imposed below the equilibrium market price, which of the following is *least likely*?

A. Consumer surplus increases.

B. Producer surplus increases.

C. Consumer surplus decreases.

16. When a minimum wage is imposed above the equilibrium market price, which of the following is *most likely*?

A. Price falls while quantity increases.

B. Price rises while quantity falls.

C. Price and quantity both rise.

17. When a minimum wage is imposed below the equilibrium market price, which of the following is *most likely*?

A. Consumer and producer surplus remain unchanged.

B. Consumer surplus increases.

C. Consumer surplus decreases.

18. Consider the following statements:

Statement 1: If demand is perfectly inelastic, consumers bear the entire burden of a tax.

Statement 2: If supply is relatively more elastic than demand, producers bear the greater burden of the tax regardless of whom the law levies the tax upon.

Which of the following is *most likely*?

A. Both statements are incorrect.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

Use the following information to answer Questions 19 to 25:

$QD_A = 7{,}500 - 500P_A + 50I + 10P_B$

$P_A = 4$

$I = 80$

$P_B = 25$

19. The price elasticity of demand for Good A is *closest to*:

A. −0.21

B. −0.26

C. −0.16

20. The income elasticity of demand for Good A is *closest to*:

A. 0.41

B. −0.41

C. 0.53

21. Cross-price elasticity of demand for Good A is *closest to*:

A. 0.026

B. 0.41

C. −0.41

22. Demand for Good A would *most likely* be classified as:

A. Relatively elastic.

B. Relatively inelastic.

C. Unitary elastic.

23. An increase in income would *most likely* lead to:

A. Consumers spending a greater proportion of their income on Good A.

B. Consumers spending a lower proportion of their income on Good A.

C. Consumers spending a lower dollar amount on Good A.

24. Good B is most likely a(n):

A. Substitute for Good A.

B. Inferior good.

C. Complement for Good A.

25. The imposition of a price floor above the free market equilibrium price would *least likely* result in an increase in:

A. Deadweight loss.

B. Producer surplus.

C. Consumer surplus.

Use the following information to answer Questions 26 and 27:

The U.S. Treasury offers to sell $140 billion worth of 52-week T-Bills and requests competitive and non-competitive bids. It receives non-competitive bids worth $45 billion. Competitive bids received are listed below:

Discount Rate Bid (%)	**Bid Price Per $100**	**Competitive Bids ($ billion)**
0.1810	99.8320	15
0.1795	99.8335	27
0.1815	99.8315	20
0.1805	99.8325	32
0.1800	99.8330	15
0.1785	99.8345	25
0.1790	99.8340	17

26. The clearing yield is *closest to*:

A. 0.1805

B. 0.1810

C. 0.1815

27. For those bidders who bid exactly the clearing bid, what percentage of their orders would actually remain unfulfilled?

A. 45%

B. 34%

C. 66%

Reading 13: Demand and Supply Analysis: Introduction

1. The demand function for orange juice is given as: QD = 50 – 4P

   The y-intercept of the demand curve is *closest to*:

   A. 50

   B. 12.5

   C. 200

   Answer: B

   The demand curve is based on the **inverse demand function** that has P as the subject.

   P = **12.5** – 0.25QD

2. For any particular good, an increase in the price of a complement would *most likely* result in:

   A. A movement along the demand curve to the right.

   B. A shift in the demand curve to the left.

   C. A shift in the demand curve to the right.

   Answer: B

   Only changes in own-price cause movements along the demand curve.

   An increase in the price of a complement results in a decrease in demand for the good, which implies that the demand curve shifts to the **left**.

3. An individual's demand function for a good is given by QD = 40 – 10P. If there were 100 such individuals in the market, the slope of the market demand curve would be *closest to*:

   A. −10

   B. −1000

   C. −0.001

   Answer: C

   The market demand curve is the horizontal summation of individual demand curves.

QD (market) = (40 – 10P) × 100

QD (market) = 4,000 – 1,000P

Demand curves are based on **inverse-demand functions**.

P = 4 **– 0.001**QD

4. Which of the following is *least likely* an exogenous variable in demand and supply analysis?

   A. Own price

   B. Wages

   C. Income

   Answer: A

   Own-price and quantity are **endogenous** variables in demand and supply analysis.

   Other factors that are determined outside of the market being studied (e.g., wages, incomes, prices of substitutes, and complements) are known as **exogenous** variables.

5. When demand and supply are downward sloping and demand intersects supply from below, the resulting equilibrium is *most likely*:

   A. Partial equilibrium.

   B. Stable equilibrium.

   C. Unstable equilibrium.

   Answer: B

   When demand and supply are downward-sloping and supply intersects demand from above (or stated differently, demand intersects supply from below) the resulting equilibrium is dynamically **stable**. If there is excess supply for example, prices will fall, leading the market toward equilibrium.

6. If supply is upward sloping and demand is downward sloping and supply intersects demand from below, the resulting equilibrium is *most likely*:

   A. Partial equilibrium.

   B. Stable equilibrium.

   C. Unstable equilibrium.

   Answer: B

When the demand curve is downward-sloping and the supply curve is upward-sloping (both are market norms) the resulting equilibrium will always be **stable**.

7. Which of the following types of actions is *most likely* to result in a seller having to sell the asset for the relatively low price?

   A. First price sealed bid auction

   B. Vickery auction

   C. Dutch auction

   Answer: A

   The possibility of the winner's curse in a first price sealed bid auction may force potential buyers to be relatively conservative in their bids.

   Buyers can be more aggressive with their bids in a Vickery or second price sealed bid auction because even if they win, they only pay the amount of the second highest bid to purchase the asset.

   In a Dutch auction, the bidding begins at a very high price and is reduced in increments until the item is sold. Buyers are likely to agree to purchase the asset at a price close to their reservation prices.

8. Consider the following statements:

   Statement 1: If close substitutes are easily available for a particular good, own-price elasticity of demand for the good will be relatively high.

   Statement 2: If a relatively large proportion of a person's income is spent on a particular good, own-price elasticity of demand for that good is most likely relatively high.

   Which of the following is *most likely*?

   A. Both statements are incorrect.

   B. Both statements are correct.

   C. Only one statement is correct.

   Answer: B

   Both statements are correct.

9. Consider the following statements:

   Statement 1: For a normal good, income elasticity of demand is always positive.

Statement 2: For an inferior good, income elasticity of demand is always negative.

Which of the following is *most likely*:

A. Both statements are incorrect.

B. Both statements are correct.

C. Only one statement is correct.

Answer: B

Both statements are correct.

10. For which of the following goods will a decrease in income *most likely* lead to a consumer spending a lower proportion of her income on the good?

A. A good for which income elasticity of demand equals +1.5

B. A good for which income elasticity of demand equals −1.5

C. A good for which income elasticity of demand equals +0.5

Answer: A

When income elasticity is greater than +1, demand is said to be income elastic.

As income increases, a consumer spends a higher proportion of her income on the good.

As income decreases, a consumer spends a lower proportion of her income on the good. The proportionate decrease in quantity demanded will be greater than the proportionate decrease in income so the good will comprise a lower proportion of the consumer's income.

11. Consider the following statements:

Statement 1: If price elasticity of demand for a good equals 1.25, an increase in price will result in a decrease in total revenue.

Statement 2: If a decrease in price leads to a decrease in total revenue, demand for the good is price elastic.

Which of the following is *most likely*:

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are incorrect.

Answer: B

Statement 1 is correct.

If a decrease in price leads to a decrease in total revenue, demand for the good is price **inelastic.**

12. In response to an increase in price from \$3.50 to \$4.20, the quantity demanded for a product falls from 120 to 90 units. Which of the following is *most likely* regarding the value and interpretation of arc elasticity of demand for the good?

	Value	Interpretation
A.	−1.57	Inelastic
B.	−1.25	Elastic
C.	−1.57	Elastic

Answer: C

Percentage change in quantity demanded = [(90 − 120)] / [(90 + 120) / 2] = −30 / 105 = −0.2857 = −28.6%

Percentage change in price = [(4.20 − 3.50)] / [(4.20 + 3.50) / 2] = 0.70 / 3.85 = 0.1818 = 18.2%

Arc elasticity = −28.6 % / 18.2% = −1.57

Since the absolute value of price elasticity is greater than 1, the demand for the product is relatively elastic.

13. For a linear demand curve, at the price where elasticity equals 2.5, decreasing prices will *most likely*:

A. Increase total revenue.

B. Have no effect on total revenue.

C. Decrease total revenue.

Answer: A

If the price elasticity of demand is 2.5, the percentage change in quantity demanded is greater than the percentage change in price. Therefore, a decrease in price will be more than offset by the increase in quantity demanded, and total revenue will increase.

14. When a rent ceiling is imposed below the equilibrium market price, which of the following is *most likely*?

A. Price falls while quantity increases.

B. Price rises while quantity falls.

C. Price and quantity both fall.

Answer: C

A rent ceiling that is imposed below the current equilibrium market price results in a reduction in both price and quantity.

15. When a rent ceiling is imposed below the equilibrium market price, which of the following is *least likely*?

A. Consumer surplus increases.

B. Producer surplus increases.

C. Consumer surplus decreases.

Answer: B

A rent ceiling that is imposed below the current equilibrium market price results in a reduction in both price and quantity. Producers are adversely affected by both these movements, so producer surplus falls. As far as consumers are concerned, they benefit from lower prices, but suffer from lower quantities, so consumer surplus could increase or decrease depending on the relative change in price and quantity after the imposition of the ceiling.

16. When a minimum wage is imposed above the equilibrium market price, which of the following is *most likely*?

A. Price falls while quantity increases.

B. Price rises while quantity falls.

C. Price and quantity both rise.

Answer: B

A minimum wage that is imposed above the current equilibrium market wage rate results in an increase in price, but a decrease in equilibrium quantity.

17. When a minimum wage is imposed below the equilibrium market price, which of the following is *most likely*?

A. Consumer and producer surplus remain unchanged.

B. Consumer surplus increases.

C. Consumer surplus decreases.

Answer: A

A minimum wage that is imposed below the current equilibrium market wage rate has no impact on economic activity. Therefore, market equilibrium remains unchanged.

18. Consider the following statements:

Statement 1: If demand is perfectly inelastic, consumers bear the entire burden of a tax.

Statement 2: If supply is relatively more elastic than demand, producers bear the greater burden of the tax regardless of whom the law levies the tax upon.

Which is the following is *most likely*?

A. Both statements are incorrect.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

Answer: B

Statement 1 is correct.

If supply is relatively more elastic that demand, consumers bear the greater burden of the tax (since demand is relatively more inelastic) regardless of whom the law levies the tax upon.

Use the following information to answer Questions 19 to 25:

$QD_A = 7{,}500 - 500P_A + 50I + 10P_B$

$P_A = 4$

$I = 80$

$P_B = 25$

19. The price elasticity of demand for Good A is *closest to*:

A. −0.21

B. −0.26

C. −0.16

Answer: A

First we must calculate quantity demanded given the demand function and the values of the independent variables:

$QD_A = 7{,}500 - 500(4) + 50(80) + 10(25) = 9{,}750$

Own-price elasticity $= -500 \times (4/9{,}750) = -0.205$.

20. The income elasticity of demand for Good A is *closest to*:

A. 0.41

B. −0.41

C. 0.53

Answer: A

Income price elasticity $= 50 \times (80/9{,}750) = 0.41$

21. Cross-price elasticity of demand for Good A is *closest to*:

A. 0.026

B. 0.41

C. −0.41

Answer: A

Cross-price elasticity $= 10 \times (25/9{,}750) = 0.0256$

22. Demand for Good A would *most likely* be classified as:

A. Relatively elastic.

B. Relatively inelastic.

C. Unitary elastic.

Answer: B

Since the absolute value of own-price elasticity of demand for Good A (0.21) lies between 0 and 1, demand for the good is relatively inelastic.

23. An increase in income would *most likely* lead to:

A. Consumers spending a greater proportion of their income on Good A.

B. Consumers spending a lower proportion of their income on Good A.

C. Consumers spending a lower dollar amount on Good A.

Answer: B

Since income elasticity of demand for Good A lies between 0 and 1, demand for the good is classified as income inelastic. The percentage increase in quantity demanded is lower than the percentage increase in income. Therefore, an increase in income leads to consumers spending a lower proportion of their income on the good.

24. Good B is *most likely* a(n):

    A. Substitute for Good A.

    B. Inferior good.

    C. Complement for Good A.

    Answer: A

    An increase in the price of Good B leads to an increase in demand for Good A (as indicated by the positive sign on the coefficient on P_B in the demand function). Therefore, the two goods are substitutes (cross elasticity is positive).

25. The imposition of a price floor above the free market equilibrium price would *least likely* result in an increase in:

    A. Deadweight loss.

    B. Producer surplus.

    C. Consumer surplus.

    Answer: C

    The imposition of a price floor above the free market equilibrium results in a decrease in consumer surplus, an increase or decrease in producer surplus, and an increase in deadweight loss.

Use the following information to answer Questions 26 and 27:

The U.S. Treasury offers to sell $140 billion worth of 52-week T-Bills and requests competitive and non-competitive bids. It receives non-competitive bids worth $45 billion. Competitive bids received are listed below:

Discount Rate Bid (%)	**Bid Price Per $100**	**Competitive Bids ($ billion)**
0.1810	99.8320	15
0.1795	99.8335	27
0.1815	99.8315	20
0.1805	99.8325	32

0.1800	99.8330	15
0.1785	99.8345	25
0.1790	99.8340	17

26. The clearing yield is *closest to*:

    A. 0.1805

    B. 0.1810

    C. 0.1815

    Answer: A

    First we must arrange the bids in ascending order of yield (descending order of price). The clearing yield is the yield at which total cumulative bids first exceed the amount offered for sale ($140 billion).

Discount Rate Bid (%)	Bid Price Per $100	Competitive Bids ($ billion)	Cumulative Competitive Bids ($ billion)	Non-Competitive Bids ($ billion)	Total Cumulative Bids ($ billion)
0.1785	99.8345	25	25	45	70
0.1790	99.8340	17	42	45	87
0.1795	99.8335	27	69	45	114
0.1800	99.8330	15	84	45	129
0.1805	99.8325	32	116	45	161
0.1810	99.8320	15	131	45	176
0.1815	99.8315	20	151	45	196

27. For those bidders who bid exactly the clearing bid, what percentage of their orders would actually remain unfulfilled?

    A. 45%

    B. 34%

    C. 66%

    Answer: C

    First $129 billion of bids that are lower than the clearing yield (0.1805) are accepted. $45 billion of the offer is given to non-competitive bidders and $84 billion to competitive bidders who bid less than the clearing yield (more than the clearing price). The remaining amount offered is distributed pro rata to those who bid the clearing yield (0.1805). Therefore, those who bid the clearing yield have (140 – 129) / 32 = 34.38% of their orders filled. This leaves approximately 66% of bids at the clearing yield **unfulfilled**.

Reading 14: Demand and Supply Analysis: Consumer Demand

1. Upon being presented with two baskets of goods that contain different goods, if a consumer states that it would be like "comparing apples to oranges" so she cannot compare the two, which of the following axioms of consumer choice theory would *most likely* be violated?

    A. Assumption of complete preferences

    B. Assumption of transitive preferences

    C. Assumption on nonsatiation

2. Which of the following is *least likely* regarding indifference curves?

    A. For a given consumer, one indifference curve must pass through each and every point in the consumption possibilities set.

    B. The indifference curves for two consumers can never intersect.

    C. Indifference curves are convex when viewed from the origin.

3. A consumer is willing to sacrifice 4 units of Good X to obtain 1 more unit of Good Y. Her marginal rate of substitution of *X* for *Y* is *closest to*:

    A. 0.25

    B. 4

    C. −4

4. Consider the following statements:

    Statement 1: The MRS of Good X for Good Y equals the slope of the indifference curve with Good Y on the y-axis and Good X on the x-axis.

    Statement 2: Indifference curves offer cardinal rankings that enable us to determine which consumption basket would be preferred.

    Which of the following is *most likely*?

    A. Both statements are correct.

B. Both statements are incorrect.

C. Only one statement is correct.

5. Robert's MRS_{YX} is given by 2.5. If Good Y is on the y-axis and Good X is on the x-axis, the slope of the indifference curve is *closest to*:

   A. 2.5

   B. −2.5

   C. −0.4

6. Chris's MRS_{AB} equals 0.8 and Max's MRS_{AB} equals 1.25. If Chris were to offer Max 1 unit of Good B in exchange for 1 unit of Good A from Max, the *most likely* outcome would be:

   A. Chris and Max would move to higher indifference curves.

   B. Chris and Max's MRS_{AB}'s would move further away from each other from the exchange.

   C. Max would decline the offer.

7. The amount of Good A that a consumer would have to give up in order to consume 1 more unit of Good B is given by:

   A. The ratio of the price of Good A to Good B.

   B. The marginal rate of substitution of Good B for Good A.

   C. The ratio of the price of Good B to Good A.

8. A consumer is currently consuming Basket A, where:

   Price of Good A = \$10

   Price of Good B = \$20

   MRS_{AB} = 0.75

   Which of the following is *most likely*?

   A. The consumer would increase total utility by increasing consumption of Good A and reducing consumption of Good B.

   B. The consumer would increase total utility by increasing consumption of Good B and reducing consumption of Good A.

C. The consumer is already maximizing her total utility given her budget constraint.

9. For a normal good, which of the following is *most likely*?

	Income Effect	Substitution Effect
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

10. For an inferior good, which of the following is *most likely*?

	Income Effect	Substitution Effect
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

11. For a Giffen good, which of the following is *most likely*?

	Income Effect	Substitution Effect
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

12. Which of the following is *most likely* regarding the slope of the demand curve for Giffen goods and Veblen goods?

	Giffen Goods	Veblen Goods
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

13. For which of the following goods is the income effect *most likely* to outweigh the substitution effect?

A. Price elastic goods

B. Inferior goods

C. Giffen goods

14. The y-intercept of the budget constraint is *most likely* given by:

    A. Income divided by the price of the good on the x-axis.

    B. Income divided by the price of the good on the y-axis.

    C. Income divided by the quantity of the good on the y-axis.

15. What is the best way to describe the budget constraint (BC) and utility indifference curve (IDC) for shoes and clothes at the point of maximum affordable satisfaction for Jane?

    A. The budget constraint equals the slope of the indifference curve.

    B. The budget constraint is less than the slope of the indifference curve.

    C. The slope of the budget constraint is greater than the slope of the indifference curve.

16. If the slope of the indifference curve (IDC) for blue jeans and shorts is at the slope of the budget constraint (BC), which of the following statements is true?

    A. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must equal the marginal rate of substitution of blue jeans for shorts.

    B. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must be greater than the marginal rate of substitution of blue jeans for shorts.

    C. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must be less than the marginal rate of substitution of blue jeans for shorts.

17. Three different companies reduced the price of their products by 10%, and in the following year two of them saw a 20% increase in sales while the other saw only a 5% increase in sales. How would you best describe the price elasticity of the company's product that saw a 5% increase in sales?

    A. Relatively elastic

B. Partially elastic

C. Relatively inelastic

Reading 14: Demand and Supply Analysis: Consumer Demand

1. Upon being presented with two baskets of goods that contain different goods, if a consumer states that it would be like "comparing apples to oranges" so she cannot compare the two, which of the following axioms of consumer choice theory would *most likely* be violated?

   A. Assumption of complete preferences

   B. Assumption of transitive preferences

   C. Assumption on nonsatiation

   Answer: A

   The assumption of complete preferences says that consumers will always be able to compare two baskets of goods and determine which one they prefer or whether they are indifferent between the two.

2. Which of the following is least likely regarding indifference curves?

   A. For a given consumer, one indifference curve must pass through each and every point in the consumption possibilities set.

   B. The indifference curves for two consumers can never intersect.

   C. Indifference curves are convex when viewed from the origin.

   Answer: B

   Indifference curves for any one consumer can never intersect (due to the transitivity assumption). Due to the completeness assumption (all available bundles can be compared) there must be one indifference curve that passes through each point in the consumption set.

   The marginal rate of substitution of one good for another decreases the more the consumer has of the first good.

3. A consumer is willing to sacrifice 4 units of Good X to obtain 1 more unit of Good Y. Her marginal rate of substitution of *X* for *Y* is *closest to*:

A. 0.25

B. 4

C. −4

Answer: A

The marginal rate of substitution of X for Y refers to the number of units of Good Y that the consumer is willing to sacrifice to obtain one more unit of Good X. This consumer is willing to sacrifice 4 units of Good X to obtain 1 more unit of Good Y, which implies that she would be willing to sacrifice 0.25 units of Good Y to obtain one more unit of Good X.

4. Consider the following statements:

   Statement 1: The MRS of Good X for Good Y equals the slope of the indifference curve with Good Y on the y-axis and Good X on the x-axis.

   Statement 2: Indifference curves offer cardinal rankings that enable us to determine which consumption basket would be preferred.

   Which of the following is *most likely*?

   A. Both statements are correct.

   B. Both statements are incorrect.

   C. Only one statement is correct.

   Answer: B

   The MRS of Good X for Good Y equals the **negative of the** slope of the indifference curve with Good Y on the y-axis and Good X on the x-axis.

   Indifference curves offer ordinal rankings that enable us to determine which consumption basket will be preferred. They do not offer cardinal rankings that enable us to evaluate the differences between baskets.

5. Robert's MRS_{YX} is given by 2.5. If Good Y is on the y-axis and Good X is on the x-axis, the slope of the indifference curve is *closest to*:

   A. 2.5

   B. −2.5

C. −0.4

Answer: C

With Good Y is on the y-axis and Good X is on the x-axis, the slope of the indifference curve is the negative of MRS_{XY}. Given an MRS_{YX} of 2.5, MRS_{XY} equals 0.4, so the slope equals −0.4.

6. Chris's MRS_{AB} equals 0.8 and Max's MRS_{AB} equals 1.25. If Chris were to offer Max 1 unit of Good B in exchange for 1 unit of Good A from Max, the *most likely* outcome would be:

A. Chris and Max would move to higher indifference curves.

B. Chris and Max's MRS_{AB}'s would move further away from each other from the exchange.

C. Max would decline the offer.

Answer: C

Max is willing to give up 1.25 units of Good B to obtain 1 more unit of Good A (Max's MRS_{AB} = 1.25). Note that this also implies that Max would give up 0.8 units of Good A to obtain 1 more unit of Good B (Max's MRS_{BA} = 0.8). He would not be willing to give up one unit of Good A for 1 unit of Good B (as proposed by Chris).

7. The amount of Good A that a consumer would have to give up in order to consume 1 more unit of Good B is given by:

A. The ratio of the price of Good A to Good B.

B. The marginal rate of substitution of Good B for Good A.

C. The ratio of the price of Good B to Good A.

Answer: C

The amount of Good A that a consumer would have to give up in order to consume 1 more unit of Good B is dictated by the slope of the budget constraint. The slope of the budget constraint in this case equals the ratio of the price of Good B to the price of Good A.

Note that the ratio of the price of Good A to Good B would give us the amount of Good B that the consumer would have to sacrifice in order to get 1 more unit of Good A.

The marginal rate of substitution of Good B for good A expresses the consumer's **willingness** to sacrifice Good A for Good B; not the amount that he would be **required** to sacrifice.

8. A consumer is currently consuming Basket A, where:

   Price of Good A = \$10

   Price of Good B = \$20

   $MRS_{AB} = 0.75$

   Which of the following is *most likely*?

   A. The consumer would increase total utility by increasing consumption of Good A and reducing consumption of Good B.

   B. The consumer would increase total utility by increasing consumption of Good B and reducing consumption of Good A.

   C. The consumer is already maximizing her total utility given her budget constraint.

   Answer: A

   MRS_{AB} (0.75) represents the rate at which the consumer is willing to sacrifice Good B for Good A.

   The ratio of the price of Good A to the price of Good B (0.5) represents the rate at which he is required to sacrifice Good B for Good A.

   Since MRS_{AB} is greater than P_A/P_B, he is willing to sacrifice Good B at a rate that is greater than required. Therefore, the consumer would be better off by including more of Good A and reducing the quantity of Good B in her consumption basket.

9. For a normal good, which of the following is *most likely*?

	Income Effect	**Substitution Effect**
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

   Answer: A

The income and substitution effects of a price change are positive for a normal good.

10. For an inferior good, which of the following is *most likely*?

	Income Effect	Substitution Effect
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

Answer: B

For an inferior good, the substitution effect is positive, but the income effect is negative.

11. For a Giffen good, which of the following is *most likely*?

	Income Effect	Substitution Effect
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

Answer: B

For a Giffen good, which is also an inferior good, the substitution effect is positive, but the income effect is negative.

12. Which of the following is *most likely* regarding the slope of the demand curve for Giffen goods and Veblen goods?

	Giffen Goods	Veblen Goods
A.	Positive	Positive
B.	Negative	Positive
C.	Positive	Negative

Answer: A

For both Giffen and Veblen goods, the relationship between price and quantity demanded is positive.

For Giffen goods, a decrease in price leads to a decrease in quantity demanded due to a very significant income effect.

For Veblen goods, an increase in price increases the attractiveness of the good, thereby increasing quantity demanded.

13. For which of the following goods is the income effect *most likely* to outweigh the substitution effect?

    A. Price elastic goods

    B. Inferior goods

    C. Giffen goods

    Answer: C

    The negative income effect from a decrease in price is most significant for a Giffen good. For a Giffen good, a decrease in price results in a positive substitution effect but a negative income effect that is so significant that it outweighs the substitution effect.

    For an inferior good, a decrease in price results in a positive substitution effect, and a negative income effect. However the negative income effect does not outweigh the positive substitution effect.

    For a good with relatively elastic demand, a slight decrease in price results in a large positive change in quantity demanded.

14. The y-intercept of the budget constraint is *most likely* given by:

    A. Income divided by the price of the good on the x-axis.

    B. Income divided by the price of the good on the y-axis.

    C. Income divided by the quantity of the good on the y-axis.

    Answer: B

    The y-intercept equals the quantity of Good Y that can be purchased if the quantity of Good X purchased equals 0. The number of units of Good Y that can be purchased if the entire income were devoted to Good Y would equal I/P_Y.

15. What is the best way to describe the budget constraint (BC) and utility indifference curve (IDC) for shoes and clothes at the point of maximum affordable satisfaction for Jane?

A. The budget constraint equals the slope of the indifference curve.

B. The budget constraint is less than the slope of the indifference curve.

C. The slope of the budget constraint is greater than the slope of the indifference curve.

Answer: B

At the point of maximum affordable satisfaction for Jane, the slope of the budget constraint (BC) is less than the slope of the indifference curve (IDC).

16. If the slope of the indifference curve (IDC) for blue jeans and shorts is at the slope of the budget constraint (BC), which of the following statements is true?

A. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must equal the marginal rate of substitution of blue jeans for shorts.

B. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must be greater than the marginal rate of substitution of blue jeans for shorts.

C. The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must be less than the marginal rate of substitution of blue jeans for shorts.

Answer: A

The ratio of the price of blue jeans to the price of shorts (Pb/Ps) must equal the marginal rate of substitution of blue jeans for shorts.

17. Three different companies reduced the price of their products by 10%, and in the following year two of them saw a 20% increase in sales while the other saw only a 5% increase in sales. How would you best describe the price elasticity of the company's product that saw a 5% increase in sales?

A. Relatively elastic

B. Partially elastic

C. Relatively inelastic

Answer: C

The last company saw only a relatively small increase in sales relative to the other firms, so this means the demand for its products is relatively inelastic. The firms that saw large increases in sales can be said to have relatively elastic demand for their products.

Reading 15: Demand and Supply Analysis: The Firm

1. If total product (TP) is increasing at an increasing rate, which of the following is *most likely*?
   A. AP and MP must be increasing as well.
   B. MP must be increasing, but AP could be increasing or decreasing.
   C. AP must be increasing, but MP could be increasing or decreasing.
2. If total product (TP) is increasing at a decreasing rate, which of the following is *most likely*?
   A. AP and MP must be increasing as well.
   B. MP must be decreasing, but AP could be increasing or decreasing.
   C. AP must be increasing, but MP could be increasing or decreasing.
3. Which of the following cost curves is *least likely* U-shaped?
   A. Short-run average fixed cost
   B. Long-run total cost
   C. Short-run average variable cost
4. Which of the following is *most likely* to be falling as MP increases?
   A. Total product
   B. Average product
   C. Marginal cost
5. Which of the following is *most likely* to be rising as AP falls?
   A. Average variable cost
   B. Marginal product
   C. Average total cost
6. Which of the following cost curves is *least likely* to shift if there is an increase in the firm's fixed costs?

A. TC

B. MC

C. AFC

7. The short run is *most likely* defined as:

   A. The period for which the quantities of all factors of production are fixed.

   B. The period for which the quantity of at least one factor of production is fixed.

   C. The time frame within which working capital decisions cannot be altered.

8. If employment of the last unit of labor increases total product, it implies that the marginal product of that unit of labor is:

   A. Falling.

   B. Increasing.

   C. Positive.

9. When marginal product (MP) is at its maximum, it is *most likely* that:

   A. Average product intersects it from above.

   B. Average variable cost is at its minimum.

   C. Marginal cost is at its minimum.

10. Which of the following most accurately describes the relationship between marginal product (MP) and average product (AP)?

    As the quantity of labor increases:

    A. Initially MP exceeds AP, and later AP exceeds MP.

    B. Initially AP exceeds MP, and later MP exceeds AP.

    C. MP interests AP from above through its minimum point.

11. When average product is at its maximum, it is *most likely* that:

    A. Average variable cost is at its minimum.

    B. Marginal product is less than AP.

C. Marginal cost is at its minimum.

12. Typically, the marginal product of labor:

    A. Increases proportionately to output.

    B. Increases initially, then reaches its peak, and later declines.

    C. Decreases initially, then reaches a minimum, and later rises.

13. When the marginal cost curve lies above the average cost curve, it is *most likely* that:

    A. Average cost is rising.

    B. Average cost is at its minimum.

    C. Average cost is falling.

14. If output increases at a decreasing rate as more units of capital are added to a given quantity of labor, the firm is *most likely* suffering from:

    A. Diminishing marginal returns to capital.

    B. Diminishing marginal returns to labor.

    C. Diseconomies of scale.

15. The upward-sloping region of a firm's planning curve *most likely* represents the existence of:

    A. Economies of scale.

    B. Diseconomies of scale.

    C. Minimum efficient scale.

Use the following information to answer Questions 16 to 20. Assume that labor is the only variable factor of production.

Quantity of Labor	**Total Product**	**Marginal Product**	**Average Product**
0	0	0	
2	10	–	5
4	24	–	–
6	–	4	–

16. The marginal product of the 2^{ND} unit of labor is *closest to*?

A. 10

B. 7

C. 5

17. The marginal product of the 4^{TH} unit of labor is *closest to*?

A. 6

B. 7

C. 14

18. The average product of labor when four units of labor are hired is *closest to*?

A. 14

B. 12

C. 6

19. Total product when six units of labor are hired is *closest to*?

A. 32

B. 28

C. 30

20. Average product when six units of labor are hired is *closest to*?

A. 4.67

B. 5.33

C. 6

Use the following information to answer Questions 21 to 29. Assume that labor is the only variable factor of production.

Q_L	TP	TFC	TVC	TC	AFC	AVC	ATC	MC
0	0	200	0	200	0	0	0	0
2	10		–	440	–	–	–	–

4	24		–	–	–	–	–	17.143
6	–		–	–	6.25	–	28.75	–
8	–		960	–	–	–	–	60

21. Average fixed cost when two units of labor are hired is *closest to*?

    A. $100

    B. $24

    C. $20

22. Average variable cost when two units of labor are hired is *closest to*?

    A. $24

    B. $20

    C. $120

23. Average total cost when two units of labor are hired is *closest to*?

    A. $220

    B. $24

    C. $44

24. Marginal cost when two units of labor are hired is *closest to*?

    A. $240

    B. $24

    C. $20

25. Average variable cost when four units of labor are hired is *closest to*?

    A. $20

    B. $10

    C. $48

26. Average total cost when four units of labor are hired is *closest to*?

    A. $10

    B. $28

    C. $68

27. Marginal product when six units of labor are hired is *closest to*?

A. 4 units

B. 8 units

C. 32 units

28. Marginal cost when six units of labor are hired is *closest to*?

A. $240

B. $24

C. $30

29. Average total cost when eight units of labor are hired is *closest to*?

A. $24

B. $32

C. $29

Use the following information to answer Questions 30 and 31:

The table below includes revenue and cost information for two companies for 2011:

	ABC $	**XYZ $**
Total revenue	5,300,000	60,000,000
Total accounting costs	4,700,000	57,000,000

The owner of ABC takes a salary reduction of $100,000 relative to the job he gave up to work on ABC. He also invested $2,000,000 in the business on which he could expect to earn $500,000 annually if he had invested the money in a similar-risk investment. XYZ has equity investment of $30,000,000 on which shareholders require a return of 8%.

30. Accounting and economic profit for ABC are closest to:

	Accounting Profit	**Economic Profit**
A.	600,000	Zero
B.	600,000	500,000

C.	100,000	Zero

31. Accounting and economic profit for XYZ are closest to:

	Accounting Profit	Economic Profit
A.	3,000,000	2,400,000
B.	600,000	Zero
C.	3,000,000	600,000

32. Consider the following statements:

    Statement 1: When accounting profit equals normal profit, economic profit equals 0.

    Statement 2: Economic rent is more likely to occur in markets where supply is perfectly elastic as opposed to perfectly inelastic.

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Both statements are incorrect.

    C. Only one statement is correct.

33. Consider the following statements:

    Statement 1: In perfect competition, MR = AR = P

    Statement 2: In imperfect competition, MR < AR = P

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Both statements are incorrect.

    C. Only one statement is correct.

34. If price is less than average total cost but greater than average variable cost, in the short run, the firms is *most likely* to:

    A. Shut down immediately.

    B. Continue to produce.

    C. Make economic profits.

35. A firm’s breakeven point occurs where:

A. P = AVC

B. P = ATC

C. P = AFC

36. A firm’s shutdown point occurs at the quantity of output where:

A. P < AVC

B. P < ATC

C. P < AFC

37. Consider the following information:

Factor of Production	**Marginal Revenue Product ($)**	**Price/unit ($)**
Labor	6	2
Capital	18	3

In order to maximize profits, the firm should *most likely*:

A. Increase quantities of labor and capital.

B. Increase quantity of capital only.

C. Increase quantity of labor only.

38. The long-run supply curve is *most likely* upward sloping for:

A. Constant-cost industries.

B. Decreasing-cost industries.

C. Increasing-cost industries.

39. In the long run, a firm operating in perfect competition will *most likely*:

A. Generate no economic profits.

B. Produce a quantity where marginal revenue is greater than marginal cost.

C. Face a perfectly inelastic demand curve.

40. External diseconomies of scale do what to a firm's average cost structure?

    A. Increases them

    B. Does nothing

    C. Decreases them

41. What happens to the slope of the long run supply (LRS) curve in a decreasing cost industry when demand increases?

    A. It slopes up.

    B. It stays the same.

    C. It slopes down.

42. What happens to the slope of the long run supply (LRS) curve in an increasing cost industry when demand increases?

    A. It slopes up.

    B. It stays the same.

    C. It slopes down.

Reading 15: Demand and Supply Analysis: The Firm

1. If total product (TP) is increasing at an increasing rate, which of the following is *most likely*?

   A. AP and MP must be increasing as well.

   B. MP must be increasing, but AP could be increasing or decreasing.

   C. AP must be increasing, but MP could be increasing or decreasing.

   Answer: A

   If TP is increasing at an increasing rate, the slope of the TP curve is rising, which implies that MP must be rising as well. If MP is rising, it lies above the AP curve, so AP must be rising as well.

2. If total product (TP) is increasing at a decreasing rate, which of the following is *most likely*?

   A. AP and MP must be increasing as well.

   B. MP must be decreasing, but AP could be increasing or decreasing.

   C. AP must be increasing, but MP could be increasing or decreasing.

   Answer: B

   If TP is increasing at a decreasing rate, the slope of the TP curve is falling, which implies that MP must be falling as well. If MP is falling, AP could still rise (if MP lies above AP) or fall (if MP lies below AP).

3. Which of the following cost curves is *least likely* U-shaped?

   A. Short-run average fixed cost

   B. Long-run total cost

   C. Short-run average variable cost

   Answer: A

   The short-run average fixed cost curve decreases at a decreasing rate as output rises and fixed costs are spread across more and more units of output.

4. Which of the following is *most likely* to be falling as MP increases?

   A. Total product

   B. Average product

   C. Marginal cost

   Answer: C

   A firm's MP curve is linked to its MC curve. As MP increases, MC falls.

5. Which of the following is *most likely* to be rising as AP falls?

   A. Average variable cost

   B. Marginal product

   C. Average total cost

   Answer: A

   A firm's AP curve is linked to its AVC curve. As AP falls, AVC rises.

6. Which of the following cost curves is *least likely* to shift if there is an increase in the firm's fixed costs?

   A. TC

   B. MC

   C. AFC

   Answer: B

   MC remains unchanged when there is a change in the firm's fixed costs of production.

7. The short run is *most likely* defined as:

   A. The period for which the quantities of all factors of production are fixed.

   B. The period for which the quantity of at least one factor of production is fixed.

   C. The time frame within which working capital decisions cannot be altered.

Answer: B

The short run is typically defined as the period for which at least one factor of production is fixed.

8. If employment of the last unit of labor increases total product, it implies that the marginal product of that unit of labor is:

   A. Falling.

   B. Increasing.

   C. Positive.

   Answer: C

   As long as marginal product is positive, total product will increase. Based on the given information, we cannot determine whether MP is increasing or decreasing. To make that decision, we would need to know whether TP is increasing at an increasing rate (MP rising) or if it is increasing at a decreasing rate (MP falling).

9. When marginal product (MP) is at its maximum, it is *most likely* that:

   A. Average product intersects it from above.

   B. Average variable cost is at its minimum.

   C. Marginal cost is at its minimum.

   Answer: C

   Marginal product is at its maximum when marginal cost is at its minimum.

10. Which of the following most accurately describes the relationship between marginal product (MP) and average product (AP)? As the quantity of labor increases:

    A. Initially MP exceeds AP, and later AP exceeds MP.

    B. Initially AP exceeds MP, and later MP exceeds AP.

    C. MP interests AP from above through its minimum point.

    Answer: A

    MP intersects the AP curve from above through its maximum point. Initially when MP is greater than AP, AP rises, and at higher levels of output when MP is less than AP, AP falls.

11. When average product is at its maximum, it is *most likely* that:

    A. Average variable cost is at its minimum.

    B. Marginal product is less than AP.

    C. Marginal cost is at its minimum.

    Answer: A

    When average product is at its maximum, average variable cost is at its minimum.

12. Typically, the marginal product of labor:

    A. Increases proportionately to output.

    B. Increases initially, then reaches its peak, and later declines.

    C. Decreases initially, then reaches a minimum, and later rises.

    Answer: B

    The marginal product curve increases initially, reaches a peak at some point, and then decreases as additional units of labor are added to fixed quantities of other factors of production.

13. When the marginal cost curve lies above the average cost curve, it is *most likely* that:

    A. Average cost is rising.

    B. Average cost is at its minimum.

    C. Average cost is falling.

    Answer: A

    If marginal cost is greater than average cost, average cost rises.

14. If output increases at a decreasing rate as more units of capital are added to a given quantity of labor, the firm is *most likely* suffering from:

    A. Diminishing marginal returns to capital.

    B. Diminishing marginal returns to labor.

    C. Diseconomies of scale.

Answer: A

Diminishing marginal returns to capital occur when output increases at a decreasing rate as capital is added to a given quantity of labor.

15. The upward-sloping region of a firm's planning curve *most likely* represents the existence of:

A. Economies of scale.

B. Diseconomies of scale.

C. Minimum efficient scale.

Answer: B

A firm's planning curve is its long-run average cost curve. Diseconomies of scale occur along the upward-sloping region of the long-run average total cost curve, where average costs rise as output increases.

Use the following information to answer Questions 16 to 20. Assume that labor is the only variable factor of production.

Quantity of Labor	**Total Product**	**Marginal Product**	**Average Product**
0	0	0	
2	10	–	5
4	24	–	–
6	–	4	–

16. The marginal product of the 2^{ND} unit of labor is *closest to*?

A. 10

B. 7

C. 5

Answer: C

Marginal product = Change in total product / Change in quantity of labor

Marginal product = (10 – 0) / (2 – 0) = 5

17. The marginal product of the 4^{TH} unit of labor is *closest to*?

    A. 6

    B. 7

    C. 14

    Answer: B

    Marginal product = Change in total product / Change in quantity of labor

    Marginal product = (24 – 10) / (4 – 2) = 7

18. The average product of labor when four units of labor are hired is *closest to*?

    A. 14

    B. 12

    C. 6

    Answer: C

    Average product = Total product / Quantity of labor

    Average product = 24 / 4 = 6

19. Total product when six units of labor are hired is *closest to*?

    A. 32

    B. 28

    C. 30

    Answer: A

    Change in total product = Change in quantity of labor × Marginal product

    Change in total product = (6 – 4) × 4 = 8

    Therefore, total product = 24 + 8 = 32

20. Average product when six units of labor are hired is *closest to*?

    A. 4.67

B. 5.33

C. 6

Answer: B

Average product = Total product / Quantity of labor

Average product = 32 / 6 = 5.33

Use the following information to answer Questions 21 to 29. Assume that labor is the only variable factor of production.

Q_L	TP	TFC	TVC	TC	AFC	AVC	ATC	MC
0	0	200	0	200	0	0	0	0
2	10		–	440	–	–	–	–
4	24		–	–	–	–	–	17.143
6	–		–	–	6.25	–	28.75	–
8	–		960	–	–	–	–	60

21. Average fixed cost when two units of labor are hired is *closest to*?

A. $100

B. $24

C. $20

Answer: C

Average fixed cost = Total fixed cost / Total product

Average fixed cost = 200 / 10 = $20

22. Average variable cost when two units of labor are hired is *closest to*?

A. $24

B. $20

C. $120

Answer: A

Average variable cost = Total variable cost / Total product

Total variable cost = 440 – 200 = $240

Average variable cost = 240 / 10 = $24

23. Average total cost when two units of labor are hired is *closest to*?

    A. $220

    B. $24

    C. $44

    Answer: C

    Average total cost = Total cost / Total product

    Average total cost = 440 / 10 = $44

24. Marginal cost when two units of labor are hired is *closest to*?

    A. $240

    B. $24

    C. $20

    Answer: B

    Marginal cost = Change in total cost / Change in total product

    Marginal cost = (440 – 200) / (10 – 0) = $24

25. Average variable cost when four units of labor are hired is *closest to*?

    A. $20

    B. $10

    C. $48

    Answer: A

    Change in total cost = Change in total product × Marginal cost

    Change in total cost = (24 – 10) × 17.143 = $240

    Therefore, total cost = 440 + 240 = $680

    Total variable cost = 680 – 200 = $480

    Therefore, average variable cost = 480 / 24 = $20

26. Average total cost when four units of labor are hired is *closest to*?

    A. $10

B. \$28

C. \$68

Answer: B

Average total cost = Total cost / Total product = 680 / 24 = \$28.33

27. Marginal product when six units of labor are hired is *closest to*?

A. 4 units

B. 8 units

C. 32 units

Answer: A

Total product = Total fixed costs / Average fixed costs

Total product = 200 / 6.25 = 32 units

Marginal product = Change in total product / Change in units of labor employed

Marginal product = (32 − 24) / 2 = 4

28. Marginal cost when six units of labor are hired is *closest to*?

A. \$240

B. \$24

C. \$30

Answer: C

Total cost = Total product × Average total cost

Total cost = 32 × 28.75 = \$920

Marginal cost = Change in total cost / Change in total product

Marginal cost = (920 – 680) / (32 – 24) = \$30

29. Average total cost when eight units of labor are hired is *closest to*?

A. \$24

B. \$32

C. \$29

Answer: B

Total cost when eight units of labor are hired = 200 + 960 = $1,160

Change in total cost = 1,160 – 920 = $240

Change in total product = Change in total cost / Marginal cost

Change in total product = 240 / 60 = 4 units

Therefore, total product = 32 + 4 = 36 units

Average total cost = 1,160 / 36 = $32.22

Use the following information to answer Questions 30 and 31:

The table below includes revenue and cost information for two companies for 2011:

	ABC $	**XYZ $**
Total revenue	5,300,000	60,000,000
Total accounting costs	4,700,000	57,000,000

The owner of ABC takes a salary reduction of $100,000 relative to the job he gave up to work on ABC. He also invested $2,000,000 in the business on which he could expect to earn $500,000 annually if he had invested the money in a similar-risk investment. XYZ has equity investment of $30,000,000 on which shareholders require a return of 8%.

30. Accounting and economic profit for ABC are closest to:

	Accounting Profit	**Economic Profit**
A.	600,000	Zero
B.	600,000	500,000
C.	100,000	Zero

Answer: A

Accounting profit (loss) = Total revenue – Total accounting costs

Accounting profit (SU) = 5,300,000 – $4,700,000 = $600,000

Economic profit (loss) = Accounting profit (loss) – Total implicit opportunity costs

Economic profit (loss) = 600,000 – 100,000 – 500,000 = $0

31. Accounting and economic profit for XYZ are closest to:

	Accounting Profit	Economic Profit
A.	3,000,000	2,400,000
B.	600,000	Zero
C.	3,000,000	600,000

Answer: C

Accounting profit (loss) = Total revenue – Total accounting costs

Accounting profit (SU) = 60,000,000 – $57,000,000 = $3,000,000

Economic profit (loss) = Accounting profit (loss) – Total implicit opportunity costs

Economic profit (loss) = 3,000,000 – (30,000,000 × 0.08) = $600,000

32. Consider the following statements:

Statement 1: When accounting profit equals normal profit, economic profit equals 0.

Statement 2: Economic rent is more likely to occur in markets where supply is perfectly elastic as opposed to perfectly inelastic.

Which of the following is *most likely*?

A. Both statements are correct.

B. Both statements are incorrect.

C. Only one statement is correct.

Answer: C

Accounting profit equals the sum of normal and economic profit. When accounting profit equals normal profit, it must be the case that economic profit equals 0.

Economic rent is more likely to occur in markets where supply is tight (close to perfectly inelastic).

33. Consider the following statements:

Statement 1: In perfect competition MR = AR = P

Statement 2: In imperfect competition MR < AR = P

Which of the following is *most likely*?

A. Both statements are correct.

B. Both statements are incorrect.

C. Only one statement is correct.

Answer: A

In perfect competition the firm can sell as many units of output as it desires at the given market price. Therefore, MR equals price.

In imperfect competition, the firm can increase quantity sold by reducing prices for all units sold. Therefore, MR declines faster than AR.

Note that AR always equals price as long as all units of output are sold at a uniform price.

34. If price is less than average total cost but greater than average variable cost, in the short run, the firms is *most likely* to:

A. Shut down immediately.

B. Continue to produce.

C. Make economic profits.

Answer: B

As long as price exceeds average variable cost, in the short run the firm will continue production so that total losses are less than total fixed costs.

The firm would exit immediately if price were less than average variable cost.

The firm would make economic profits if price were greater than average total cost.

35. A firm's breakeven point occurs where:

A. P = AVC

B. P = ATC

C. P = AFC

Answer: B

A firm breaks even where total revenues equal total costs. This occurs when P = ATC.

36. A firm's shutdown point occurs at the quantity of output where:

A. P < AVC

B. P < ATC

C. P < AFC

Answer: A

A firm would shut down in the short run if price were less than average variable cost. In this case the firm would cease operations and incur a loss equal to total fixed cost in the short run.

37. Consider the following information:

Factor of Production	**Marginal Revenue Product ($)**	**Price/Unit ($)**
Labor	6	2
Capital	18	3

In order to maximize profits, the firm should *most likely*:

A. Increase quantities of labor and capital.

B. Increase quantity of capital only.

C. Increase quantity of labor only.

Answer: A

Profits are maximized at input levels where $MRP_K/P_K = MRP_L/P_L = 1$

The firm should increase quantities of labor and capital, as for both these factors the marginal revenue product exceeds cost of a unit. The next unit of labor added would contribute 6 – 2 = $4 to profits, while the next unit of capital employed would contribute 18 – 3 = $15 to profits.

38. The long-run supply curve is *most likely* upward sloping for:

A. Constant-cost industries.

B. Decreasing-cost industries.

C. Increasing-cost industries.

Answer: C

The long-run supply curve for increasing-cost industries is upward sloping as the entry of more firms results in an increase in costs for all firms in the industry.

39. In the long run, a firm operating in perfect competition will *most likely*:

A. Generate no economic profits.

B. Produce a quantity where marginal revenue is greater than marginal cost.

C. Face a perfectly inelastic demand curve.

Answer: A

In the long run, firms in perfect competition earn zero economic profits.

40. External diseconomies of scale do what to a firm's average cost structure?

A. Increases them

B. Does nothing

C. Decreases them

Answer: A

External diseconomies are factors outside of a firm's control, such as congestion at airports or supply chain constraints. Diseconomies of scale increase the average costs for individual firms and happen as industry output increases.

41. What happens to the slope of the long run supply (LRS) curve in a

decreasing cost industry when demand increases?

A. It slopes up.

B. It stays the same.

C. It slopes down.

Answer: C

In a decreasing cost industry, the long run supply (LRS) curve slopes downward because new firms enter the industry when prices increase and push down costs for all firms in the process. This allows firms to produce the same quantity of a good, but for a lower price.

42. What happens to the slope of the long run supply (LRS) curve in an increasing cost industry when demand increases?

A. It slopes up.

B. It stays the same.

C. It slopes down.

Answer: A

In an increasing cost industry, the long run supply curve (LRS) slopes upward because new firms enter the industry when prices increase and push up costs for all firms in the process. This in turn means firms need to charge higher prices for the same quantity supplied.

Reading 16: The Firm and Market Structures

1. Which of the following is *least likely* an assumption of perfect competition?

   A. There are a large number of buyers and sellers in the market.

   B. Each producer makes a differentiated product.

   C. There is perfect information.

2. Which of the following is *most likely* in the long run in perfect competition?

   A. Price equals marginal cost.

   B. Price is greater than marginal revenue.

   C. Price is greater than average total cost.

3. The industry demand curve in a perfectly competitive market is *most likely*:

   A. Upward sloping.

   B. Horizontal (perfectly elastic).

   C. Downward sloping.

4. In perfect competition, the price of the product is *most likely* determined by:

   A. The producers of the product.

   B. Market supply and demand.

   C. Consumers.

5. Firms in perfect competition will *most likely* increase their total output until:

   A. Marginal cost equals price.

   B. Marginal revenue equals average total cost.

   C. Total revenue equals price.

6. Which of the following is *most likely* regarding the relationship between price (P), marginal cost (MC), and marginal revenue (MR) at the profit-maximizing output level for a firm in perfect competition?

   A. MC < MR < P

   B. P = MC = MR

   C. P > MC = MR

7. Which of the following statements about monopolies is *least accurate*?

   A. A monopoly's profit-maximizing quantity is at the point where marginal revenue equals marginal cost.

   B. A monopoly charges the highest possible price.

   C. A monopoly sells a product for which there are no close substitutes.

8. Which of the following is *most likely* a consequence of perfect price discrimination?

   A. The output produced by a monopoly that can engage in perfect price discrimination is greater than the output that would be produced were the industry perfectly competitive.

   B. There is no consumer surplus if a monopoly engages in perfect price discrimination.

   C. Perfect price discrimination results in a deadweight loss to society.

9. Which of the following *most likely* describes the price and output produced under perfect competition relative to a single-price monopoly?

	Price	**Output**
A.	Higher	Lower
B.	Lower	Higher
C.	Same	Same

10. Which of the following *most likely* describes the price and output produced under perfect competition relative to perfect price discrimination by a monopoly?

	Price	**Output**

A.	Lower	Same
B.	Lower	Higher
C.	Same	Same

11. Which of the following is *least likely* a characteristic of monopolistic competition?

   A. Low barriers to entry

   B. Product differentiation

   C. Small number of firms

12. If a monopoly's marginal cost equals $50 and market analysis indicates that own-price elasticity of demand for its product equals 1.15, the optimal price that the monopoly should charge is *closest to*:

   A. $383

   B. $57.50

   C. $43

13. Which of the following pricing methods is also known as efficient regulation?

   A. Profit-maximizing price

   B. P = MC

   C. P = AC

14. Which of the following is *most likely* an advantage of monopolistic competition compared to perfect competition?

   A. More choice

   B. Excess capacity

   C. Markup

15. Which of the following oligopoly models asserts that there is a break in the marginal revenue curve and small changes in marginal cost do not result in a change in the profit-maximizing level of output?

   A. Kinked demand curve model

   B. Cournot assumption

C. Dominant firm model

16. Which of the following oligopoly models asserts that decision-making is sequential?

    A. Kinked demand curve model

    B. Cournot assumption

    C. Dominant firm model

17. Which of the following oligopoly models asserts that firms make their output decisions after considering the responses of its rivals?

    A. Nash equilibrium

    B. Cournot assumption

    C. Dominant firm model

18. Which of the following is *least likely* to improve the chances of successful collusion among firms in an oligopoly?

    A. Order sizes are large and orders are received more frequently.

    B. Firms in the industry produce similar products.

    C. There are fewer firms in the industry.

19. Which of the following measures of industry concentration is *most likely* to reflect the impact of mergers in the top tier on competition within the industry?

    A. Cross-sectional regression analysis

    B. The N-firm concentration ratio

    C. The HH-Index

20. Which of the following is not a characteristic of a monopoly?

    A. There are high barriers to entry.

    B. The product is differentiated through price strategies.

    C. The firm has considerable pricing power.

21. Firms operating in monopolistic markets produce which type of profits?

    A. Positive economic profits

B. Negative economic profits

C. No economic profits

22. What happens to the profit-maximizing price for a monopoly when the expected price of the product increases dramatically and marginal product costs are unchanged?

A. The price goes up.

B. The price goes down.

C. It cannot be determined.

23. Which of the following statements is correct about the cost structure of a natural monopoly?

A. A natural monopoly has high fixed costs, but low and relatively constant marginal costs.

B. A natural monopoly has high fixed costs, and also high and relatively constant marginal costs.

C. A natural monopoly has low fixed costs, but low and relatively constant marginal costs.

24. Which of the following is not a characteristic of a competitive monopoly?

A. There are a large number of buyers and of sellers.

B. The products offered by each seller are similar but not identical.

C. There are high barriers to entry and exit.

25. In the short run, a firm that is operating in monopolistic competition will produce a quantity of products where?

A. Marginal revenue equals marginal cost.

B. Marginal revenue equals average cost.

C. Marginal cost equals demand.

26. In a monopolistically competitive market, what happens to a firm's profits when demand is less than average cost?

A. Positive economic profits

B. Negative economic profits

C. Zero economic profits

27. Which of the following statements is not true regarding the supply and demand characteristics of monopolistic competition?

A. Demand is relatively elastic at higher prices and lower prices.

B. The firm will always produce at the output level where MC = MR.

C. The price that is charged is derived from the market demand curve.

28. There are currently four airline companies in the United States, and one of them is contemplating raising its prices to increase profits. In an oligopolistic competitive market, what will the other three firms likely do with their prices?

A. Increase them

B. Decrease them

C. Keep them the same

29. There are currently four airline companies in the United States, and one of them is contemplating decreasing its prices to capture market share. In an oligopolistic competitive market, what will the other three firms likely do with their prices?

A. Increase them

B. Decrease them

C. Keep them the same

30. The demand curve in oligopoly markets is kinked. What is the best description of price behavior to the left of the point at which the demand curve is kinked?

A. Inelastic region

B. Elastic region

C. Highly elastic region

31. Which of the following factors does not increase the chance of collusion in oligopolistic markets?

A. There are a small number of firms in the industry.

B. The firms produce dissimilar products.

C. The firms have similar cost structures.

32. Which of the following statements regarding the N-firm concentration ratio is true?

    A. It changes little by mergers in the top tier.

    B. It changes a lot by mergers in the top tier.

    C. It remains unchanged.

33. The Herfindahl-Hirschman Index (HHI) is constructed by which of the following?

    A. Adding the squares of the market shares of each of the largest N companies

    B. Adding the market shares of each of the largest N companies

    C. Squaring the market shares of each of the smallest N companies

34. If the top two companies in an industry were to each grow their market share from 20% to 25% and the two other top firms' market share remained unchanged at 10%, the change in the Herfindahl-Hirschman Index (HHI) value relative to the N-firm concentration ratio value would be?

    A. Higher

    B. Lower

    C. The same

Reading 16: The Firm and Market Structures

1. Which of the following is *least likely* an assumption of perfect competition?

   A. There are a large number of buyers and sellers in the market.

   B. Each producer makes a differentiated product.

   C. There is perfect information.

   Answer: B

   In perfect competition, each producer makes an identical product.

2. Which of the following is *most likely* in the long run in perfect competition?

   A. Price equals marginal cost.

   B. Price is greater than marginal revenue.

   C. Price is greater than average total cost.

   Answer: A

   In perfect competition, price always equals marginal revenue, as the demand curve facing each individual producer is perfectly elastic (each producer is a price-taker). Since each firm aims to maximize its profits, it must produce at the point where MR equals MC, which implies that price must equal marginal cost as well. Price cannot be greater than MR or ATC as this would mean that the firm would make economic profits (which is impossible in perfect competition in the long run).

3. The industry demand curve in a perfectly competitive market is *most likely*:

   A. Upward sloping.

   B. Horizontal (perfectly elastic).

   C. Downward sloping.

   Answer: C

   In perfect competition, the industry demand curve is downward sloping. The individual firm's demand curve is perfectly elastic.

4. In perfect competition, the price of the product is *most likely* determined by:

   A. The producers of the product.

   B. Market supply and demand.

   C. Consumers.

   Answer: B

   Prices are determined at the point where industry demand equals industry supply.

5. Firms in perfect competition will *most likely* increase their total output until:

   A. Marginal cost equals price.

   B. Marginal revenue equals average total cost.

   C. Total revenue equals price.

   Answer: A

   In perfect competition, since the demand curve is horizontal (perfectly elastic), price equals marginal revenue. Therefore, a firm in perfect competition will continue to expand output until MC equals MR (price).

6. Which of the following is *most likely* regarding the relationship between price (P), marginal cost (MC), and marginal revenue (MR) at the profit-maximizing output level for a firm in perfect competition?

   A. MC < MR < P

   B. P = MC = MR

   C. P > MC = MR

   Answer: B

   In perfect competition, profits are maximized at the output level where MC equals MR. Since demand facing each individual firm is perfectly elastic, MR equals price.

7. Which of the following statements about monopolies is *least accurate*?

A. A monopoly's profit-maximizing quantity is at the point where marginal revenue equals-marginal cost.

B. A monopoly charges the highest possible price.

C. A monopoly sells a product for which there are no close substitutes.

Answer: B

A monopolist does not charge the highest possible price (the price at which only one unit of output will be sold). A profit-maximizing monopoly charges a price that corresponds to the profit-maximizing quantity (where MC = MR) on the demand curve.

8. Which of the following is *most likely* a consequence of perfect price discrimination?

A. The output produced by a monopoly that can engage in perfect price discrimination is greater than the output that would be produced were the industry perfectly competitive.

B. There is no consumer surplus if a monopoly engages in perfect price discrimination.

C. Perfect price discrimination results in a deadweight loss to society.

Answer: B

The entire consumer surplus is grabbed by the monopolist (producer) under perfect price discrimination.

The output produced under perfect price discrimination is the **same** as the output level produced were the industry perfectly competitive (allocative efficiency is reached).

Strictly speaking, perfect price discrimination is "efficient" as there is **no** deadweight loss.

9. Which of the following *most likely* describes the price and output produced under perfect competition relative to a single-price monopoly?

	Price	**Output**
A.	Higher	Lower
B.	Lower	Higher

C.	Same	Same

Answer: B

In perfect competition, prices are lower and total output is higher than under a single-price monopoly.

10. Which of the following *most likely* describes the price and output produced under perfect competition relative to perfect price discrimination by a monopoly?

	Price	**Output**
A.	Lower	Same
B.	Lower	Higher
C.	Same	Same

Answer: A

In perfect competition, prices are lower and total output is the same as in a situation where a monopoly engages in perfect price discrimination.

11. Which of the following is *least likely* a characteristic of monopolistic competition?

A. Low barriers to entry

B. Product differentiation

C. Small number of firms

Answer: C

There are a relatively **large** number of firms in monopolistic competition.

12. If a monopoly's marginal cost equals $50 and market analysis indicates that own-price elasticity of demand for its product equals 1.15, the optimal price that the monopoly should charge is *closest to*:

A. $383

B. $57.50

C. $43

Answer: A

The relationship between MR and price elasticity of demand is given by:

$MR = P[1 – (1/E_P)]$. At the profit-maximizing quantity of output, MC = MR.

Therefore

$MC = P[1 – (1/E_P)]$

$50/[1 – (1/1.15)] = \$383.33$

13. Which of the following pricing methods is also known as efficient regulation?

    A. Profit-maximizing price

    B. P = MC

    C. P = AC

    Answer: B

    Marginal cost pricing is known as efficient regulation because it results in an allocatively efficient outcome (MC = MR).

14. Which of the following is *most likely* an advantage of monopolistic competition compared to perfect competition?

    A. More choice

    B. Excess capacity

    C. Markup

    Answer: A

    Even though monopolistic competition results in excess capacity (output < efficient scale of production) and markup (MB and P > MC), it offers consumers more choice than perfect competition.

15. Which of the following oligopoly models asserts that there is a break in the marginal revenue curve and small changes in marginal cost do not result in a change in the profit-maximizing level of output?

    A. Kinked demand curve model

B. Cournot assumption

C. Dominant firm model

Answer: A

Under the Kinked demand curve model, there is a break in the MR curve at the output level where the demand curve kinks. As a result, there is a range within which fluctuations in MC do not cause a change in the profit-maximizing level of output.

16. Which of the following oligopoly models asserts that decision-making is sequential?

A. Kinked demand curve model

B. Cournot assumption

C. Dominant firm model

Answer: C

Under the dominant firm or Stackelberg model, the dominant firm makes its output decision first, and then each of the following (smaller) firms make their output decision based on the price charged by the dominant firm.

17. Which of the following oligopoly models asserts that firms make their output decisions after considering the responses of their rivals?

A. Nash equilibrium

B. Cournot assumption

C. Dominant firm model

Answer: A

Nash equilibrium is based on game theory. Each firm tries to maximize its own profits given the expected responses of its rivals.

18. Which of the following is *least likely* to improve the chances of successful collusion among firms in an oligopoly?

A. Order sizes are large and orders are received more frequently.

B. Firms in the industry produce similar products.

C. There are fewer firms in the industry.

Answer: A

Small orders that are received more frequently improve chances of successful collusion.

19. Which of the following measures of industry concentration is *most likely* to reflect the impact of mergers in the top tier on competition within the industry?

    A. Cross-sectional regression analysis

    B. The N-firm concentration ratio

    C. The HH-Index

    Answer: C

    The HHI is *most likely* to reflect the impact of mergers in the top tier on market structure and competition within the industry.

20. Which of the following is not a characteristic of a monopoly?

    A. There are high barriers to entry.

    B. The product is differentiated through price strategies.

    C. The firm has considerable pricing power.

    Answer: B

    In the case of a monopoly, products are differentiated through non-price strategies (e.g., advertising). All the other statements are true.

21. Firms operating in monopolistic markets produce which type of profits?

    A. Positive economic profits

    B. Negative economic profits

    C. No economic profits

    Answer: A

    In a monopolistic industry, positive economic profits are possible and are a function of the price consumers are willing to pay minus the monopoly's average cost (AC) curve.

22. What happens to the profit-maximizing price for a monopoly when the

expected price of the product increases dramatically and marginal product costs are unchanged?

A. The price goes up.

B. The price goes down.

C. It cannot be determined.

Answer: B

In the equation that determines the optimal price for a product in a monopoly, increasing the expected sales price will decrease the optimal selling price.

23. Which of the following statements is correct about the cost structure of a natural monopoly?

A. A natural monopoly has high fixed costs, but low and relatively constant marginal costs.

B. A natural monopoly has high fixed costs, and also high and relatively constant marginal costs.

C. A natural monopoly has low fixed costs, but low and relatively constant marginal costs.

Answer: A

A natural monopoly has high fixed costs, but low and relatively constant marginal costs.

24. Which of the following is not a characteristic of a competitive monopoly?

A. There are a large number of buyers and of sellers.

B. The products offered by each seller are similar but not identical.

C. There are high barriers to entry and exit.

Answer: C

In competitive monopolies, there are low barriers to entry and exit, which is in stark contrast to pure monopolies, where the barriers to entry are high.

25. In the short run, a firm that is operating in monopolistic competition

will produce a quantity of products where?

A. Marginal revenue equals marginal cost.

B. Marginal revenue equals average cost.

C. Marginal cost equals demand.

Answer: A

In monopolistically competitive markets, firms make production decisions just at they do in purely monopolistic markets, which is to produce at a point where marginal revenue equals marginal cost.

26. In a monopolistically competitive market, what happens to a firm's profits when demand is less than average cost?

    A. Positive economic profits

    B. Negative economic profits

    C. Zero economic profits

    Answer: B

    When demand falls below average cost in a monopolistically competitive market, a firm will experience negative economic profits as a result.

27. Which of the following statements is not true regarding the supply and demand characteristics of monopolistic competition?

    A. Demand is relatively elastic at higher prices and lower prices.

    B. The firm will always produce at the output level where MC = MR.

    C. The price that is charged is derived from the market demand curve.

    Answer: A

    In monopolistic competition, demand is relatively elastic at higher prices and relatively inelastic at lower prices.

28. There are currently four airline companies in the United States, and one of them is contemplating raising its prices to increase profits. In an oligopolistic competitive market, what will the other three firms likely do with their prices?

    A. Increase them

B. Decrease them

C. Keep them the same

Answer: C

In an oligopoly, the three remaining firms would leave their prices unchanged relative to the fourth. This is because they expect the fourth company will lose market share to them through their price increases, as consumers will shift demand to other firms.

29. There are currently four airline companies in the United States, and one of them is contemplating decreasing its prices to capture market share. In an oligopolistic competitive market, what will the other three firms likely do with their prices?

    A. Increase them

    B. Decrease them

    C. Keep them the same

    Answer: B

    In an oligopoly, the three remaining firms would decrease their prices relative to the fourth to avoid losing market share, thereby limiting potential market share increases by the fourth firm.

30. The demand curve in oligopoly markets is kinked. What is the best description of price behavior to the left of the point at which the demand curve is kinked?

    A. Inelastic region

    B. Elastic region

    C. Highly elastic region

    Answer: B

    The demand curve to the left of the kink in oligopoly markets is an elastic region of demand, but it does not necessarily mean demand is highly elastic.

31. Which of the following factors does not increase the chance of collusion in oligopolistic markets?

    A. There are a small number of firms in the industry.

B. The firms produce dissimilar products.

C. The firms have similar cost structures.

Answer: B

To improve the chances of collusion in an industry, the products sold need to be essentially similar, not dissimilar.

32. Which of the following statements regarding the N-firm concentration ratio is true?

A. It changes little by mergers in the top tier.

B. It changes a lot by mergers in the top tier.

C. It remains unchanged.

Answer: A

The N-firm concentration ratio is an additive process of various firms' industry market share. As such, it is a poor measure of concentration changes when top-tier industry mergers occur, but will change some with merger activity.

33. The Herfindahl-Hirschman Index (HHI) is constructed by which of the following?

A. Adding the squares of the market shares of each of the largest N companies

B. Adding the market shares of each of the largest N companies

C. Squaring the market shares of each of the smallest N companies

Answer: A

The Herfindahl-Hirschman Index (HHI) is constructed by adding the squares of the market shares of each of the largest N companies.

34. If the top two companies in an industry were to each grow their market share from 20% to 25% and the two other top firms' market share remained unchanged at 10%, the change in the Herfindahl-Hirschman Index (HHI) value relative to the N-firm concentration ratio value would be?

A. Higher

B. Lower

C. The same

Answer: B

If you run the calculations, the N-firm concentration ratio goes up by 10, whereas the HHI only increases in value from 10% to 14.5%.

Reading 17: Aggregate Output, Prices, and Economic Growth

1. Aggregate income *least likely* includes:
   A. Payments made for the purchase of goods and services.
   B. Health insurance paid for employees.
   C. Payments made for borrowing funds.
2. A country's gross domestic product (GDP) is *most accurately* described as:
   A. The market value of all intermediate and final goods produced within an economy in a given period of time.
   B. The total income, as well as unemployment compensation, earned by all households, companies, and the government within an economy in a given period of time.
   C. The total amount spent on the goods and services produced within an economy over a given period of time.
3. Which of the following is *least likely* to be included in the calculation of GDP?
   A. Capital gains
   B. By-products of the production process that can be sold in the market
   C. Owner-occupied rent

Use the following information to answer Questions 4 and 5:

Glen Autos imports raw materials worth $7,000 for manufacturing a car, which it sells to Luxury Cars (a retailer) for $12,000. Luxury Cars sells the car to the final customer for $15,000.

4. The amount of value added by Glen Autos in the production process is *closest to*:
   A. $12,000

B. $8,000

C. $5,000

5. Based on the expenditure approach, the amount included in the calculation of GDP is *closest to*:

   A. $8,000

   B. $15,000

   C. $34,000

6. A country's GDP is *least likely* to decline as a result of:

   A. A decrease in government spending.

   B. An increase in the country's imports.

   C. An increase in the country's exports.

7. Consider the following statements:

   Statement 1: A government is said to have a trade deficit if its expenditure exceeds net taxes.

   Statement 2: An economy must finance a trade deficit by borrowing from the rest of the world.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are correct.

8. Which of the following statements is *most accurate*?

   A. A country's real GDP is the value of all final goods and services at current prices.

   B. Nominal GDP is calculated by removing the effects of inflation from real GDP.

   C. A country's nominal GDP may change even if there is no change in overall economic activity.

Use the following information to answer Questions 9 to 11:

An analyst gathered the following information:

	2007 (Base Year)	2008	2009	2010
No. of units of final output	640,000	690,000	750,000	780,000
Average market price ($)	21,500	22,140	23,247	24,250

9. Nominal GDP for 2008 is *closest to*:
   A. $1.53 billion
   B. $1.48 billion
   C. $15.28 billion
10. Real GDP in 2009 is *closest to*:
   A. $1.61 billion
   B. $17.44 billion
   C. $16.13 billion
11. The value of GDP deflator in 2010 is *closest to*:
   A. 88.66
   B. 112.79
   C. 0.89

Use the following information to answer Questions 12 and 13:

Over a period of 1 year, a country's real GDP increases from $168 billion to $179 billion, and the GDP deflator increases from 115 to 122.

12. The increase in the country's nominal GDP over the year is *closest to*:
   A. 6.55%
   B. 13.03%
   C. 4.34%
13. The increase in the price level over the year is *closest to*:
   A. 6.09%
   B. 6.55%
   C. 4.34%

Use the following information to answer Questions 14 to 17:

An analyst gathered the following information:

	2010 ($)
Expenditure Based:	
Consumer spending	650,350
Government spending	325,330
Government gross fixed investment	65,975
Business gross fixed investment	453,584
Exports	523,960
Less: Imports	−459,023
Change in inventories	5,580
Statistical discrepancy	55
GDP at Market Prices	
Income Based:	
Wages, salaries, and supplementary labor income	
Corporate profits before tax	325,750
Government business enterprise profits before taxes	18,456
Interest income	
Unincorporated business net income, including rent	85,670
Taxes less subsidies on factors of production	62,195
Taxes less subsidies on products	85,962
National Income	
Statistical discrepancy	884
Capital consumption allowance	151,264
GDP at Market Prices	
Undistributed corporate profits	90,425

Corporate income taxes	65,180
Transfer payments: government to consumer	145,850
Personal Income	
Personal disposable income	980,573
Interest paid to business	25,679
Consumer transfers to foreigners	6,218
Personal Saving	

14. Based on the expenditure approach, the country's GDP at market prices is *closest to*:

    A. $1,565,811

    B. $2,483,857

    C. $1,976,285

15. The country's national income is *closest to*:

    A. $1,413,663

    B. $2,331,709

    C. $1,824,137

16. The country's personal income is *closest to*:

    A. $1,255,751

    B. $2,173,797

    C. $1,666,225

17. The country's personal saving is *closest to*:

    A. $298,326

    B. $304,544

    C. $948,676

18. The capital consumption allowance *most likely* refers to:

    A. The amount reinvested in businesses to increase the productivity of the capital stock.

B. The amount of subsidies paid by the government to businesses for the purchase of capital stock.

C. The amount reinvested in businesses to maintain the existing productivity of the capital stock.

19. Personal income *least likely* includes:

A. Transfer payments from the government.

B. Indirect business taxes.

C. Wages and supplements to wages.

20. Consider the following statements:

Statement 1: National income includes all income received by households whether it is earned or unearned.

Statement 2: Business-sector saving includes undistributed corporate profits and the capital consumption allowance.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

21. Based on the equation of equality of expenditure and income, which of the following conditions is *most likely* to finance a government's fiscal deficit?

A. Private sector saving exceeds private sector investment and exports exceed imports.

B. Private sector investment exceeds private sector saving and imports exceed exports.

C. Private sector saving exceeds private sector investment and imports exceed exports.

22. The aggregate supply curve in the very short run is *most likely*:

A. Upward sloping because wages and prices of other inputs do not fully adjust to changes in the price level.

B. Flat because output can be adjusted to a certain degree without a corresponding change in prices.

C. Vertical because wages and prices of other inputs fully adjust to changes in the price level.

23. The position of the long-run aggregate supply curve is *most likely* dependent on:

A. The price level.

B. The level of interest rates.

C. The economy's potential output.

24. Which of the following *most accurately* defines the conditions that must be satisfied to derive the IS and LM curves respectively?

	IS Curve	**LM Curve**
A.	Planned expenditure = Actual output	Real money supply = Real money demand
B.	Real money supply = Real money demand	Planned expenditure = Actual output
C.	Aggregate demand = Aggregate supply	Money market equilibrium

25. Consumption expenditure *more likely* varies:

A. Positively with income and taxes.

B. Positively with income but negatively with taxes.

C. Negatively with income and taxes.

26. Investment expenditure *most likely* varies:

A. Positively with income and real interest rates.

B. Positively with income but negatively with real interest rates.

C. Negatively with income and real interest rates.

27. The government's fiscal balance (G –T) *most likely*:

A. Does not vary with income.

B. Varies positively with income.

C. Varies negatively with income.

28. Net exports *most likely* vary:

    A. Positively with income and the domestic price level.

    B. Positively with income but negatively with the domestic price level.

    C. Negatively with income and the domestic price level.

29. The IS curve illustrates a:

    A. Negative relationship between the price level and aggregate output.

    B. Negative relationship between the real interest rate and income.

    C. Negative relationship between income and the trade and fiscal balances.

30. The LM curve illustrates a:

    A. Negative relationship between real money demand and real interest rates.

    B. Positive relationship between income and real interest rates.

    C. Positive relationship between the saving-investment differential and income.

31. Which of the following will *most likely* cause the LM curve to shift to the left?

    A. A decrease in the price level

    B. A decrease in real money supply

    C. An increase in nominal money supply

32. Which of the following is *most likely* to result in a flatter aggregate demand curve?

    A. Investment expenditure is insensitive to interest rates.

    B. Money demand is sensitive to interest rates.

    C. Money demand is insensitive to income.

33. Which of the following is *least likely* to cause the aggregate demand curve to shift to the left?

    A. Appreciation of the domestic currency

B. Higher taxes

C. Higher global economic growth

34. An increase in which of the following is *least likely* to cause the aggregate supply curve to shift to the left?

A. Nominal wages

B. Business taxes

C. Subsidies

35. Suppose an economy is initially operating at full employment. An increase in aggregate demand that takes short-run equilibrium to a point beyond the economy's potential output *most likely* results in:

A. An increase in prices in the long run and the short run.

B. An increase in prices in the long run, but no change in prices in the short run.

C. An increase in prices in the short run, but no change in prices in the long run.

36. Suppose an economy is initially operating at full employment. A decrease in aggregate demand that takes the economy into a deflationary gap *most likely* results in:

A. A decrease in output in the short run and the long run.

B. An increase in output in the short run, but a decrease in output in the long run.

C. A decrease in output in the short run, but no change in output in the long run.

37. The following information is related to a developing economy:

Consumption expenditure = \$47 million

Government expenditure = \$102 million

Investment expenditure = \$62 million

Exports = \$77 million

Imports = \$83 million

Taxes = $20 million

The country's aggregate demand is *closest to*?

A. $185 million

B. $205 million

C. $288 million

38. Based on the following information, exports are *closest to*?

Aggregate demand = $200 million

Consumption expenditure = $25 million

Government expenditure = $65 million

Investment expenditure = $70 million

Imports = $32 million

A. $8 million

B. $40 million

C. $72 million

39. If economic data indicates that an increase in aggregate demand is expected to take the economy into an inflationary gap, which of the following strategies should an investor pursue?

A. Increase investment in defensive companies

B. Increase investment in commodities

C. Increase investment in fixed-income securities

40. The marginal productivity of capital is *most likely*:

A. The same in developing and developed economies.

B. Higher in developed economies compared to developing economies.

C. Lower in developed economies compared to developing economies.

41. Which of the following is *most likely* to have the most significant impact on the standard of living in an economy?

A. Quantity of labor

B. Quantity of capital relative to labor

C. Growth in technology

42. Consider the following information:

Long-term growth rate of labor force = 1.5%

Long-term growth rate in labor productivity = 2.5%

Total factor productivity (scale factor) = 1.5%

The potential GDP growth rate for this economy is *closest to*:

A. 6%

B. 4%

C. 3.75%

Reading 17: Aggregate Output, Prices, and Economic Growth

1. Aggregate income *least likely* includes:

   A. Payments made for the purchase of goods and services.

   B. Health insurance paid for employees.

   C. Payments made for borrowing funds.

   Answer: A

   Aggregate income includes:

   - Employee compensation including wages and benefits
   - Rent
   - Interest
   - Profit

   Payments made for the purchase of goods and services are classified under **aggregate expenditure**.

2. A country's gross domestic product (GDP) is *most accurately* described as:

   A. The market value of all intermediate and final goods produced within an economy in a given period of time.

   B. The total income, as well as unemployment compensation, earned by all households, companies, and the government within an economy in a given period of time.

   C. The total amount spent on the goods and services produced within an economy over a given period of time.

   Answer: C

   GDP is defined as the total amount spent on the goods and services produced within an economy over a given period of time.

   It does not include:

- The market value of intermediate goods; and
- Unemployment compensation.

3. Which of the following is *least likely* to be included in the calculation of GDP?

   A. Capital gains

   B. By-products of the production process that can be sold in the market

   C. Owner-occupied rent

   Answer: A

   Capital gains that accrue to individuals from appreciation in the value of their assets are not included in the calculation of GDP.

Use the following information to answer Questions 4 and 5:

Glen Autos imports raw materials worth $7,000 for manufacturing a car, which it sells to Luxury Cars (a retailer) for $12,000. Luxury Cars sells the car to the final customer for $15,000.

4. The amount of value added by Glen Autos in the production process is *closest to*:

   A. $12,000

   B. $8,000

   C. $5,000

   Answer: C

   Value added by Glen Autos = 12,000 – 7,000 = **$5,000**

5. Based on the expenditure approach, the amount included in the calculation of GDP is *closest to*:

   A. $8,000

   B. $15,000

   C. $34,000

   Answer: A

   GDP may either be calculated as the value of the final output

($15,000), or the sum of value added during the entire production and distribution processes (7,000 + 5,000 + 3,000 = $15,000), adjusted for the value of imported inputs ($7,000). 15,000 – 7,000 = **$8,000**

6. A country's GDP is *least likely* to decline as a result of:

   A. A decrease in government spending.

   B. An increase in the country's imports.

   C. An increase in the country's exports.

   Answer: C

   A decrease in government spending or an increase in the country's imports will lead to a decline in GDP. An increase in exports leads to an increase in GDP.

7. Consider the following statements:

   Statement 1: A government is said to have a trade deficit if its expenditure exceeds net taxes.

   Statement 2: An economy must finance a trade deficit by borrowing from the rest of the world.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are correct.

   Answer: A

   A government is said to have a **fiscal deficit** if its expenditure exceeds its net taxes.

   An economy has a **trade deficit** when its imports exceed its exports. A trade deficit must be funded by borrowing from the rest of the world.

8. Which of the following statements is *most accurate*?

   A. A country's real GDP is the value of all final goods and services at current prices.

   B. Nominal GDP is calculated by removing the effects of inflation from real GDP.

C. A country's nominal GDP may change even if there is no change in overall economic activity.

Answer: C

Changes in the price level would cause a change in a country's nominal GDP even if there is no change in overall economic activity.

A country's real GDP is the value of all final goods and services at **constant or base-period** prices.

Real GDP is calculated by removing the effects of inflation from nominal GDP.

Use the following information to answer Questions 9 to 11:

An analyst gathered the following information:

	2007 (Base Year)	**2008**	**2009**	**2010**
No. of units of final output	640,000	690,000	750,000	780,000
Average market price ($)	21,500	22,140	23,247	24,250

9. Nominal GDP for 2008 is *closest to*:

   A. $1.53 billion

   B. $1.48 billion

   C. $15.28 billion

   Answer: C

   Nominal GDP = Quantity produced in Year t × Prices in Year t

   Nominal GDP = 690,000 × 22,140 = $15,276,600,000

10. Real GDP in 2009 is *closest to*:

    A. $1.61 billion

    B. $17.44 billion

    C. $16.13 billion

    Answer: C

Real GDP = Quantity produced in Year t × Prices in the base year

Real GDP = 750,000 × 21,500 = $16,125,000,000

11. The value of GDP deflator in 2010 is *closest to*:

    A. 88.66

    B. 112.79

    C. 0.89

    Answer: B

    GDP Deflator = (Nominal GDP / Real GDP) × 100

    Nominal GDP in 2010 = 780,000 × 24,250 = $18,915,000,000

    Real GDP in 2010 = 780,000 × 21,500 = $16,770,000,000

    Therefore, the value of GDP deflator in 2010 = (18,915,000,000 / 16,770,000,000) × 100

    GDP deflator = 112.79

Use the following information to answer Questions 12 and 13:

Over a period of 1 year, a country's real GDP increases from $168 billion to $179 billion, and the GDP deflator increases from 115 to 122.

12. The increase in the country's nominal GDP over the year is *closest to*:

    A. 6.55%

    B. 13.03%

    C. 4.34%

    Answer: B

    GDP Deflator = (Nominal GDP / Real GDP) × 100

    Therefore:

    Nominal GDP = (GDP Deflator / 100) × Real GDP

    Nominal GDP at the beginning of the year = (115 / 100) × 168 = $193.2

    Nominal GDP at the end of the year = (122 / 100) × 179 = $218.38

    Percentage increase in nominal GDP = (218.38 / 193.2) – 1 = **13.03%**

13. The increase in the price level over the year is *closest to*:

A. 6.09%

B. 6.55%

C. 4.34%

Answer: A

Increase in price level = (122 / 115) – 1 = 6.09%

Use the following information to answer Questions 14 to 17:

An analyst gathered the following information:

	2010 ($)
Expenditure Based:	
Consumer spending	650,350
Government spending	325,330
Government gross fixed investment	65,975
Business gross fixed investment	453,584
Exports	523,960
Less: Imports	−459,023
Change in inventories	5,580
Statistical discrepancy	55
GDP at Market Prices	
Income Based:	
Wages, salaries, and supplementary labor income	
Corporate profits before tax	325,750
Government business enterprise profits before taxes	18,456
Interest income	
Unincorporated business net income, including rent	85,670
Taxes less subsidies on factors of production	62,195

Taxes less subsidies on products	85,962
National Income	
Statistical discrepancy	884
Capital consumption allowance	151,264
GDP at Market Prices	
Undistributed corporate profits	90,425
Corporate income taxes	65,180
Transfer payments: government to consumer	145,850
Personal Income	
Personal disposable income	980,573
Interest paid to business	25,679
Consumer transfers to foreigners	6,218
Personal Saving	

14. Based on the expenditure approach, the country's GDP at market prices is *closest to*:

    A. $1,565,811

    B. $2,483,857

    C. $1,976,285

    Answer: A

    GDP = Consumer spending on goods and services + Government spending on goods and service + Government gross fixed investment + Business gross fixed investment + Exports – Imports + Change in inventories + Statistical discrepancy

    GDP = 650,350 + 325,330 + 65,975 + 453,584 + 523,960 – 459,023 + 5,580 + 55

    GDP = **$1,565,811**

15. The country's national income is *closest to*:

    A. $1,413,663

    B. $2,331,709

C. $1,824,137

Answer: A

National income = Compensation of employees + Corporate and government enterprise profits before taxes + Interest income + Unincorporated business net income (proprietor's income) + Rent + Inventory valuation adjustment + Indirect business taxes – Subsidies

Since a lot of information to calculate national income based on the above formula is missing from the table, we can also use the following formula:

GDP at market price = National income + Statistical discrepancy + Capital consumption allowance

Therefore, national income = GDP at market price – Statistical discrepancy – Capital consumption allowance

National income = 1,565,811 – 884 – 151,264 = **$1,413,663**

16. The country's personal income is *closest to*:

A. $1,255,751

B. $2,173,797

C. $1,666,225

Answer: A

Personal income = National income – Indirect business taxes – Corporate income taxes – Undistributed corporate profits + Transfer payments

Personal income = 1,413,663 – 62,195 – 85,962 – 65,180 – 90,425 + 145,850

Personal income = **$1,255,751**

17. The country's personal saving is *closest to*:

A. $298,326

B. $304,544

C. $948,676

Answer: A

Personal saving = Personal disposable income – Consumer spending – Interest paid to business – Consumer transfers to foreigners

Personal saving = 980,573 – 650,350 – 25,679 – 6,218 = **$298,326**

18. The capital consumption allowance *most likely* refers to:

A. The amount reinvested in businesses to increase the productivity of the capital stock.

B. The amount of subsidies paid by the government to businesses for the purchase of capital stock.

C. The amount reinvested in businesses to maintain the existing productivity of the capital stock.

Answer: C

The capital consumption allowance accounts for the wear and tear of capital stock during the production process. It is the amount that must be reinvested in the business to maintain current productivity of the capital stock.

19. Personal income *least likely* includes:

A. Transfer payments from the government.

B. Indirect business taxes.

C. Wages and supplements to wages.

Answer: B

Personal income	=	National income
	–	Indirect business taxes
	–	Corporate income taxes
	–	Undistributed corporate profits
	+	Transfer payments

20. Consider the following statements:

Statement 1: National income includes all income received by households whether it is earned or unearned.

Statement 2: Business-sector saving includes undistributed corporate profits and the capital consumption allowance.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

Personal income includes all income received by households whether it is earned or unearned.

21. Based on the equation of equality of expenditure and income, which of the following conditions is *most likely* to finance a government's fiscal deficit?

A. Private sector saving exceeds private sector investment and exports exceed imports.

B. Private sector investment exceeds private sector saving and imports exceed exports.

C. Private sector saving exceeds private sector investment and imports exceed exports.

Answer: C

$G - T = (S - I) - (X - M)$

Therefore, in order to finance a fiscal deficit, where $(G - T)$ is positive:

- The private sector must save more than it invests; and/or
- The country's imports must exceed its exports (trade deficit), with a corresponding inflow of foreign saving.

22. The aggregate supply curve in the very short run is *most likely*:

A. Upward sloping because wages and prices of other inputs do not fully adjust to changes in the price level.

B. Flat because output can be adjusted to a certain degree without a corresponding change in prices.

C. Vertical because wages and prices of other inputs fully adjust to changes in the price level.

Answer: B

The very short run is defined as the time period over which companies can only change output level to some degree while keeping prices constant.

23. The position of the long-run aggregate supply curve is *most likely* dependent on:

    A. The price level.

    B. The level of interest rates.

    C. The economy's potential output.

    Answer: C

    The position of the long-run aggregate supply curve depends on the potential output of the economy, that is, how much output the economy is able to produce based on the given quantities of capital and labor and the available technology.

24. Which of the following *most accurately* defines the conditions that must be satisfied to derive the IS and LM curves respectively?

	IS Curve	LM Curve
A.	Planned expenditure = Actual output	Real money supply = Real money demand
B.	Real money supply = Real money demand	Planned expenditure = Actual output
C.	Aggregate demand = Aggregate supply	Money market equilibrium

Answer: A

Equilibrium in the **goods market** (planned expenditure equals actual income/output) gives rise to the IS curve.

Equilibrium in the **money market** (real money demand equals real money supply) gives rise to the LM curve.

25. Consumption expenditure *more likely* varies:

A. Positively with income and taxes.

B. Positively with income but negatively with taxes.

C. Negatively with income and taxes.

Answer: B

Higher income leads to higher consumption expenditure.

Higher taxes reduce disposable income and lead to a decline in consumption.

26. Investment expenditure *most likely* varies:

A. Positively with income and real interest rates.

B. Positively with income but negatively with real interest rates.

C. Negatively with income and real interest rates.

Answer: B

Higher income suggests that future profitability will be high so there is an increase in investment expenditure.

Higher real interest rates increase the cost of obtaining funds and lead to a decline in investment expenditure.

27. The government's fiscal balance (G –T) *most likely*:

A. Does not vary with income.

B. Varies positively with income.

C. Varies negatively with income.

Answer: C

Government expenditure does not vary with income. An increase in income leads to an increase in taxes. Therefore, the fiscal balance varies **negatively** with income.

28. Net exports *most likely* vary:

A. Positively with income and the domestic price level.

B. Positively with income but negatively with the domestic price level.

C. Negatively with income and the domestic price level.

Answer: C

Higher domestic income leads to an increase in imports.

Higher domestic price levels lead to an increase in imports and a decline in exports.

29. The IS curve illustrates a:

    A. Negative relationship between the price level and aggregate output.

    B. Negative relationship between the real interest rate and income.

    C. Negative relationship between income and the trade and fiscal balances.

    Answer: B

    The IS curve illustrates the negative relationship between the real interest rate and income.

30. The LM curve illustrates a:

    A. Negative relationship between real money demand and real interest rates.

    B. Positive relationship between income and real interest rates.

    C. Positive relationship between the saving-investment differential and income.

    Answer: B

    The LM curve illustrates the positive relationship between income and real interest rates.

31. Which of the following will *most likely* cause the LM curve to shift to the left?

    A. A decrease in the price level

    B. A decrease in real money supply

    C. An increase in nominal money supply

    Answer: B

    An increase (decrease) in real money supply would shift the LM curve to the right (left)

32. Which of the following is *most likely* to result in a flatter aggregate demand curve?

    A. Investment expenditure is insensitive to interest rates.

    B. Money demand is sensitive to interest rates.

    C. Money demand is insensitive to income.

    Answer: C

    The aggregate demand curve would be flatter if:

    - Investment expenditure is highly sensitive to the interest rate.
    - Saving is insensitive to income.
    - Money demand is insensitive to interest rates.
    - Money demand is insensitive to income.

33. Which of the following is *least likely* to cause the aggregate demand curve to shift to the left?

    A. Appreciation of the domestic currency

    B. Higher taxes

    C. Higher global economic growth

    Answer: C

    Higher growth in the global economy would lead to an increase in exports from the domestic economy, shifting the demand curve to the **right**.

    Appreciation of the domestic currency would result in a decrease in exports and an increase in imports, shifting the AD curve to the **left**.

    Higher taxes would reduce disposable income, shifting the AD curve to the **left**.

34. An increase in which of the following is *least likely* to cause the aggregate supply curve to shift to the left?

    A. Nominal wages

    B. Business taxes

    C. Subsidies

Answer: C

Subsidies lower the cost of production and result in the aggregate supply curve shifting to the **right**.

Increases in nominal wages and business taxes would increase cost of production and shift the AS curve to the **left**.

35. Suppose an economy is initially operating at full employment. An increase in aggregate demand that takes short-run equilibrium to a point beyond the economy's potential output *most likely* results in:

    A. An increase in prices in the long run and the short run.

    B. An increase in prices in the long run, but no change in prices in the short run.

    C. An increase in prices in the short run, but no change in prices in the long run.

    Answer: A

    Initially, prices rise in the short run as the economy operates in an inflationary gap. Eventually, aggregate supply falls and takes prices even higher.

36. Suppose an economy is initially operating at full employment. A decrease in aggregate demand that takes the economy into a deflationary gap *most likely* results in:

    A. A decrease in output in the short run and the long run.

    B. An increase in output in the short run, but a decrease in output in the long run.

    C. A decrease in output in the short run, but no change in output in the long run.

    Answer: C

    When the economy falls into a deflationary gap, real output falls in the short run, but eventually an increase in SRAS restores LR equilibrium at potential output. In the long run, the economy always operates at a point on its LRAS curve, or at the full employment level of output.

37. The following information is related to a developing economy:

Consumption expenditure = $47 million

Government expenditure = $102 million

Investment expenditure = $62 million

Exports = $77 million

Imports = $83 million

Taxes = $20 million

The country's aggregate demand is *closest to*?

A. $185 million

B. $205 million

C. $288 million

Answer: B

Aggregate demand = 47 + 102 + 62 + (77 – 83) = **$205 million**

38. Based on the following information, exports are *closest to*?

Aggregate demand = $200 million

Consumption expenditure = $25 million

Government expenditure = $65 million

Investment expenditure = $70 million

Imports = $32 million

A. $8 million

B. $40 million

C. $72 million

Answer: C

Exports = 200 – 25 – 65 – 70 + 32 = **$72 million**

39. If economic data indicates that an increase in aggregate demand is expected to take the economy into an inflationary gap, which of the following strategies should an investor pursue?

A. Increase investment in defensive companies

B. Increase investment in commodities

C. Increase investment in fixed-income securities

Answer: B

In an inflationary gap, defensive companies would be expected to underperform cyclical companies, commodity prices would be expected to rise, and fixed income securities would be expected to underperform as interest rates would be expected to rise.

40. The marginal productivity of capital is *most likely*:

A. The same in developing and developed economies.

B. Higher in developed economies compared to developing economies.

C. Lower in developed economies compared to developing economies.

Answer: C

Marginal productivity of capital is higher in developing countries due to the lower quantities of capital used in those countries.

41. Which of the following is *most likely* to have the most significant impact on the standard of living in an economy?

A. Quantity of labor

B. Quantity of capital relative to labor

C. Growth in technology

Answer: C

Growth in per capita potential GDP = Growth in technology + W_K(Growth in capital-labor ratio)

This equation shows that advances in technology have a more significant impact on an economy's standard of living compared to capital.

- Weight on growth in technology = 1
- Weight on growth in K-L ratio = W_K which is typically less than 1.

42. Consider the following information:

Long-term growth rate of labor force = 1.5%

Long-term growth rate in labor productivity = 2.5%

Total factor productivity (scale factor) = 1.5%

The potential GDP growth rate for this economy is *closest to*:

A. 6%

B. 4%

C. 3.75%

Answer: B

Potential GDP growth rate = Long-term growth rate of labor force + Long-term labor productivity growth rate

=1.5% + 2.5% = 4%

Reading 18: Understanding Business Cycles

1. Consider the following statements:

   Statement 1: A business cycle typically consists of a sequence of distinct phases.

   Statement 2: Business cycles are recurrent and periodic.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

2. Consider the following statements:

   Statement 1: During an expansion, all sectors of the economy are growing.

   Statement 2: For each business cycle, the peak and the trough can occur at different levels of economic activity.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

3. Inflation is *most likely* to grow most rapidly during:

   A. Recovery.

   B. Late expansion.

   C. Peak.

4. At the onset of an economic slowdown, cutbacks in which of the following types of capital spending typically takes the longest period of time?

   A. Technology

B. Light equipment

C. Construction

5. Activity in which of the following sectors is most sensitive to changes in interest rates?

   A. External sector

   B. Housing sector

   C. Consumer sector

6. Changes in which of the following variables are *least likely* to affect the external sector?

   A. GDP growth differentials

   B. Currency movements

   C. Orders for durable goods

7. Which of the following schools of macroeconomic thought is *least likely* to advocate leaving the economy alone to adjust on its own?

   A. Austrian school of thought

   B. Neoclassical school of thought

   C. Neo-Keynesian school of thought

8. Which of the following schools of macroeconomic thought is *most likely* to apportion the blame for business cycles squarely on the government?

   A. Austrian school of thought

   B. Neoclassical school of thought

   C. Monetarist school of thought

9. Aggregate supply plays a crucial role in which of the following business cycle theories?

   A. New Keynesian theory

   B. Real business cycle theory

   C. Monetarist theory

10. Which of the following economic indicators *most likely* leads

movements in the aggregate economy?

A. Employees on nonagricultural payrolls

B. Inventory-sales ratio

C. S&P 500 index

11. Consider the following statements:

Statement 1: An increase in the diffusion index implies that an analyst can be less confident that the index represents broader movements in the overall economy.

Statement 2: Lagging economic indicators are used to identify the condition of the economy in the past.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

12. Consider the following statements:

Statement 1: An increase in unit labor cost (ULC) implies that inflationary pressures on the economy are easing.

Statement 2: Demand-pull inflationary pressures on the economy are generally analyzed based on capacity utilization levels.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

13. The combination of rising prices along with rising unemployment is *most likely* known as:

A. Hyper inflation.

B. Disinflation.

C. Stagflation.

14. Which of the following persons is *most likely* to be classified as

unemployed?

A. A discouraged worker

B. A person who has just left a job and is about to start a new one

C. A part-time worker

15. Use of a Fischer index when calculating inflation rates *most likely* mitigates:

A. The substitution bias.

B. The quality bias.

C. The new product bias.

16. Consider the following statements:

Statement 1: A Paasche index is based on the current composition of the consumption basket.

Statement 2: Core inflation is a better predictor of domestic inflation than headline inflation.

Which of the following is *most likely*?

A. Both statements are incorrect.

B. Only one statement is correct.

C. Both statements are correct.

Use the following information to answer Questions 17 to 21:

An analyst gathered the following information regarding an index based on the following consumption basket.

The initial value of the index is given as 100.

	June 2011		**July 2011**	
Goods Consumed	**Quantity**	**Price**	**Quantity**	**Price**
Rice	20kg	\$6/kg	35kg	\$7.5/kg
Cotton	40kg	\$7.5/kg	55kg	\$8/kg

17. The value of the Laspeyres index in July 2011 is *closest to*:

A. 89.36

B. 149.47

C. 111.90

18. The value of the Paasche index in July 2011 is *closest to*:

    A. 112.85

    B. 111.90

    C. 149.47

19. The inflation rate based on the Paasche index over 2011 is *closest to*:

    A. 11.90%

    B. 49.47%

    C. 12.85%

20. The value of the Fischer index in July 2011 is *closest to*:

    A. 112.37

    B. 129.88

    C. 100.42

21. The inflation rate based on the Fischer index over 2011 is *closest to*:

    A. 29.88%

    B. 4.20%

    C. 12.37%

Reading 18: Understanding Business Cycles

1. Consider the following statements:

   Statement 1: A business cycle typically consists of a sequence of distinct phases.

   Statement 2: Business cycles are recurrent and periodic.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: A

   Business cycles are recurrent (they occur again and again), but they are not periodic (they do not always have the same intensity and/or duration).

2. Consider the following statements:

   Statement 1: During an expansion, all sectors of the economy are growing.

   Statement 2: For each business cycle, the peak and the trough can occur at different levels of economic activity.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: B

   During an expansion, while most sectors of the economy are growing, certain sectors may not be growing. An expansion refers to growth in the aggregate (or overall) level of economic activity in a country.

3. Inflation is *most likely* to grow most rapidly during:

A. Recovery.

B. Late expansion.

C. Peak.

Answer: C

Inflation typically grows most rapidly during the peak of the business cycle.

4. At the onset of an economic slowdown, cutbacks in which of the following types of capital spending typically takes the longest period of time?

   A. Technology

   B. Light equipment

   C. Construction

   Answer: C

   Cutbacks in construction and installation of complex pieces of equipment take longer than expenditure on technology and light equipment.

   An increase in spending on durable goods (to catch up for the delay in spending on them) relative to nondurables and services suggests that a **recovery** must be close.

   Spending on durables most closely follows trends in permanent income.

5. Activity in which of the following sectors is most sensitive to changes in interest rates?

   A. External sector

   B. Housing sector

   C. Consumer sector

   Answer: B

   Since most home purchases are financed with mortgage loans, housing sector activity tends to be very sensitive to changes in interest rates. A decrease in interest rates tends to increase home purchasing and construction.

6. Changes in which of the following variables are *least likely* to affect the external sector?

   A. GDP growth differentials

   B. Currency movements

   C. Orders for durable goods

   Answer: C

   Spending on durable goods has no direct impact on the external sector of the economy. GDP growth differentials have a more immediate and straightforward impact on the external trade balance.

   Currency movements have a more complex and gradual impact on the trade balance.

7. Which of the following schools of macroeconomic thought is *least likely* to advocate leaving the economy alone to adjust on its own?

   A. Austrian school of thought

   B. Neoclassical school of thought

   C. Neo-Keynesian school of thought

   Answer: C

   Under the Neo-Keynesian school, markets do not self-adjust seamlessly if they find themselves in disequilibrium. This is because:

   - Prices and wages are "downward sticky" (in contrast to the new classical school).
   - It is costly for companies to constantly update prices to clear markets (menu costs).
   - Companies need time to reorganize production in response to economic shocks.

8. Which of the following schools of macroeconomic thought is *most likely* to apportion the blame for business cycles squarely on the government?

   A. Austrian school of thought

B. Neoclassical school of thought

C. Monetarist school of thought

Answer: A

The Austrian school of thought attributes the entire blame for business cycles on the government. The government only causes a "boom-and-bust" cycle. To restore equilibrium, the economy must be left alone and all prices (including wages) must decrease.

9. Aggregate supply plays a crucial role in which of the following business cycle theories?

A. New Keynesian theory

B. Real business cycle theory

C. Monetarist theory

Answer: B

Under the Real business cycle theory, aggregate supply plays a more prominent role (than in other theories) in bringing about business cycles.

10. Which of the following economic indicators *most likely* leads movements in the aggregate economy?

A. Employees on nonagricultural payrolls

B. Inventory-sales ratio

C. S&P 500 index

Answer: C

The S&P 500 Index is a leading economic indicator. Nonfarm payrolls is a coincident indicator, while the inventory-sales ratio is a lagging indicator.

11. Consider the following statements:

Statement 1: An increase in the diffusion index implies that an analyst can be less confident that the index represents broader movements in the overall economy.

Statement 2: Lagging economic indicators are used to identify the condition of the economy in the past.

Which of the following is most likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: B

A diffusion index measures the proportion of the index's components that have moved in the same direction as the overall index. For example, if 7 out of the 10 indicators in the LEI point toward an expansion, the diffusion index would have a value of 70. An increase in this value would suggest that more components of the index are rising, and implies that analysts can be **more confident** that the index is representing broader movements in the economy.

Statement 2 is correct.

12. Consider the following statements:

Statement 1: An increase in unit labor cost (ULC) implies that inflationary pressures on the economy are easing.

Statement 2: Demand-pull inflationary pressures on the economy are generally analyzed based on capacity utilization levels.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

If wage rates grow at a faster rate than labor productivity, businesses' costs per unit of output (OLC) increase. Businesses then look to increase output prices to protect profit margins so inflationary pressures **build** on the economy.

Statement 2 is correct.

13. The combination of rising prices along with rising unemployment is

most likely known as:

A. Hyper inflation.

B. Disinflation.

C. Stagflation.

Answer: C

If an economy is experiencing high inflation along with high unemployment and slow economic growth, it is said to be suffering stagflation.

14. Which of the following persons is *most likely* to be classified as unemployed?

A. A discouraged worker

B. A person who has just left a job and is about to start a new one

C. A part-time worker

Answer: B

A discouraged worker is not classified as unemployed because she has stopped looking for work.

A part-time worker is likely underemployed, but she is still not counted as unemployed.

A person who has left a job and is about to start another one is **frictionally unemployed**.

15. Use of a Fischer index when calculating inflation rates most likely mitigates:

A. The substitution bias.

B. The quality bias.

C. The new product bias.

Answer: A

Use of chained price index formulas (e.g., the Fischer index) can mitigate the impact of the substitution bias on inflation numbers.

16. Consider the following statements:

Statement 1: A Paasche index is based on the current composition of the consumption basket.

Statement 2: Core inflation is a better predictor of domestic inflation than headline inflation.

Which of the following is most likely?

A. Both statements are incorrect.

B. Only one statement is correct.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

A Paasche index is based on the current composition of the consumption basket, while a Laspeyres index is based on the base-period composition of the basket.

Core inflation excludes food and energy prices and is therefore less susceptible to short-term volatility in their prices.

Use the following information to answer Questions 17 to 21:

An analyst gathered the following information regarding an index based on the following consumption basket.

The initial value of the index is given as 100.

	June 2011		**July 2011**	
Goods Consumed	**Quantity**	**Price**	**Quantity**	**Price**
Rice	20kg	$6/kg	35kg	$7.5/kg
Cotton	40kg	$7.5/kg	55kg	$8/kg

17. The value of the Laspeyres index in July 2011 is *closest to*:

A. 89.36

B. 149.47

C. 111.90

Answer: C

$$\text{Price index in July 2011} = \frac{(7.5 \times 20) + (8 \times 40)}{(6 \times 20) + (7.5 \times 40)} \times 100 = 111.90$$

18. The value of the Paasche index in July 2011 is *closest to*:

    A. 112.85

    B. 111.90

    C. 149.47

    Answer: A

$$\text{Price index in July 2011} = \frac{(7.5 \times 35) + (8 \times 55)}{(6 \times 35) + (7.5 \times 55)} \times 100 = 112.85$$

19. The inflation rate based on the Paasche index over 2011 is *closest to*:

    A. 11.90%

    B. 49.47%

    C. 12.85%

    Answer: C

    Inflation rate = (112.85/100) – 1 = 12.85%

20. The value of the Fischer index in July 2011 is *closest to*:

    A. 112.37

    B. 129.88

    C. 100.42

    Answer: A

    Price index in July 2011 = $(111.9 \times 112.85)^{0.5}$ = 112.37

21. The inflation rate based on the Fischer index over 2011 is *closest to*:

    A. 29.88%

    B. 4.20%

    C. 12.37%

    Answer: C

    Inflation rate = (112.37/100) – 1 = 12.37%

Reading 19: Monetary and Fiscal Policy

1. Given a required reserve ratio of 25%, the increase in money supply from a $1,000 deposit into the banking system would be **closest to:**

   A. $4,000

   B. $750

   C. $1,250

2. According to the quantity theory of money, an increase in the quantity of money is **least likely** to lead to:

   A. An increase in velocity of circulation.

   B. An increase in the price level.

   C. An increase in real output.

3. Under money neutrality, an increase in money supply is **most likely** to result in:

   A. An increase in real output.

   B. An increase in price levels.

   C. A decrease in real output.

4. Consider the following statements:

   Statement 1: Transactions and precautionary money balances are positively related to overall GDP.

   Statement 2: Speculative money demand is negatively related to the perceived risk of financial assets.

   Which of the following is most likely?

   A. Both statements are correct.

   B. Only Statement 1 is correct.

   C. Only Statement 2 is correct.

5. The fact that central banks seem to believe that monetary policy does have a real impact on macroeconomic variables goes against the

concept of:

A. Money neutrality.

B. Fiat money.

C. Fischer effect.

6. Which of the following is *least likely* a function of the central bank in an economy?

   A. Managing the country's foreign exchange and gold reserves

   B. Acting as the lender of last resort to banks

   C. Deciding on tax policy

7. Which of the following is the overarching objective of most central banks around the world?

   A. Maximum employment

   B. Stable prices

   C. Moderate long-term interest rates

8. Lower than expected inflation is *least likely* to benefit which of the following?

   A. Retired people on fixed monthly pensions

   B. Borrowers

   C. Lenders

9. Which of the following *most likely* describes the impact of a decrease in the official parity rate on the domestic currency, consumption, and asset prices?

	Domestic Currency	**Consumption**	**Asset Prices**
A.	Depreciates	Increases	Increase
B.	Depreciates	Decreases	Decrease
C.	Appreciates	Increases	Decrease

10. The two components of the neutral rate of interest are **most likely**:

    A. Long-run expected inflation and the real growth rate of the economy.

B. Long-run expected inflation and the real risk-free rate.

C. The real growth rate of the economy and a risk premium.

11. A situation where reductions in interest rates fail to stimulate consumption is referred to as:

A. Money neutrality.

B. Quantitative easing.

C. Liquidity trap.

12. Which monetary policy is the Fed *least likely* to adopt in an expansion?

A. Increase taxes

B. Increase FFR

C. Conduct an open market sale

13. The *most likely* discretionary fiscal policy in a recession is:

A. To increase the money supply.

B. To reduce government expenditure.

C. To reduce taxes.

14. Which of the following is *least likely* an automatic fiscal policy stabilizer?

A. Unemployment compensation

B. Income taxes

C. Real interest rates

15. Which of the following statements regarding automatic stabilizers is *least accurate*?

A. They tend to take the budget toward a surplus in a recession and a deficit in an expansion.

B. There is no administrative lag associated with them.

C. They stimulate the economy during a recession and cool it down during an expansion.

16. Which of the following statements is *most accurate* regarding the government expenditure multiplier and the tax multiplier?

    A. The effects of the government expenditure multiplier outweigh those of the tax multiplier, which makes the balanced budget multiplier positive.

    B. The effects of the government expenditure multiplier are less significant than those of the tax multiplier, which makes the balanced budget multiplier negative.

    C. The effects of the government expenditure multiplier exactly offset those of the tax multiplier, which makes the balanced budget multiplier equal zero.

17. Which of the following is *least likely* a reason for a government to worry about the size of the fiscal deficit relative to GDP?

    A. Government spending may crowd out private investment.

    B. Borrowed funds can be spent on capital investments, which may lead to an increase in the economy's productive capacity.

    C. Hyperinflation may result if the government loses credibility regarding its ability to finance the deficit.

18. Consider the following statements:

    Statement 1: Compared to raising direct taxes, indirect taxes are more effective and efficient in generating revenue for the government.

    Statement 2: Compared to reducing direct taxes, increasing government spending has a more significant impact on aggregate output.

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Both statements are incorrect.

    C. Only one statement is correct.

19. All other factors remaining the same, which of the following combinations of the marginal propensity to consume (MPC) and the net tax rate (t) would lead to the lowest value for the fiscal multiplier in

an economy?

	MPC	t
A.	Higher	Higher
B.	Lower	Higher
C.	Higher	Lower

20. In order to identify a government's budgetary stance, economists are *most likely* to look at:

    A. The cyclical budget balance.

    B. The structural budget balance.

    C. The balanced budget multiplier.

21. The lag associated with implementation of a discretionary fiscal action is *most likely* known as:

    A. The recognition lag.

    B. The action lag.

    C. The impact lag.

22. Which of the following combinations of fiscal and monetary policy is *most likely* to result in the proportional share of the public sector in the economy increasing and the proportional share of the private sector in the economy decreasing?

	Fiscal Policy	Monetary Policy
A.	Easy	Tight
B.	Tight	Easy
C.	Easy	Easy

Reading 19: Monetary and Fiscal Policy

1. Given a required reserve ratio of 25%, the increase in money supply from a $1,000 deposit into the banking system would be *closest to*:

   A. $4,000

   B. $750

   C. $1,250

   Answer: A

   The money multiplier equal 1/0.25 = 4

   Money created = $1,000 × 4 = $4,000

2. According to the quantity theory of money, an increase in the quantity of money is *least likely* to lead to:

   A. An increase in velocity of circulation.

   B. An increase in the price level.

   C. An increase in real output.

   Answer: A

   Under the quantity theory of money, MV = PY. An increase in M is *least likely* to bring about an increase in V.

3. Under money neutrality, an increase in money supply is *most likely* to result in:

   A. An increase in real output.

   B. An increase in price levels.

   C. A decrease in real output.

   Answer: B

   Money neutrality states that an increase in the quantity of money will only lead to an increase in the price level. It will not lead to an increase in real output.

4. Consider the following statements:

Statement 1: Transactions and precautionary money balances are positively related to overall GDP.

Statement 2: Speculative money demand is negatively related to the perceived risk of financial assets.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

Answer: B

Only Statement 1 is correct.

5. The fact that central banks seem to believe that monetary policy does have a real impact on macroeconomic variables goes against the concept of:

   A. Money neutrality.

   B. Fiat money.

   C. Fischer effect.

   Answer: A

   Money neutrality states that the quantity of money only has an impact on the price level, not on real GDP. The fact that central banks continue to pursue monetary policy to achieve macroeconomic goals means that they believe that money neutrality does not hold, at least in the short run.

6. Which of the following is *least likely* a function of the central bank in an economy?

   A. Managing the country's foreign exchange and gold reserves

   B. Acting as the lender of last resort to banks

   C. Deciding on tax policy

   Answer: C

   Tax policy comes under fiscal policy and is not a responsibility of the central bank.

7. Which of the following is the overarching objective of most central banks around the world?

   A. Maximum employment

   B. Stable prices

   C. Moderate long-term interest rates

   Answer: B

   Maintaining price stability is the primary goal of most central banks around the world.

8. Lower than expected inflation is *least likely* to benefit which of the following?

   A. Retired people on fixed monthly pensions

   B. Borrowers

   C. Lenders

   Answer: B

   Lower than expected inflation leads to borrowers losing out as the real value of their payments on debts increases.

9. Which of the following *most likely* describes the impact of a decrease in the official parity rate on the domestic currency, consumption, and asset prices?

	Domestic Currency	Consumption	Asset Prices
A.	Depreciates	Increases	Increase
B.	Depreciates	Decreases	Decrease
C.	Appreciates	Increases	Decrease

   Answer: A

   A decrease in the official parity rate leads to an increase in asset prices (as the PV of future cash flows increases), a depreciation of the domestic currency (as hot money flows out), and an increase in consumption.

10. The two components of the neutral rate of interest are *most likely*:

A. Long-run expected inflation and the real growth rate of the economy.

B. Long-run expected inflation and the real risk-free rate.

C. The real growth rate of the economy and a risk premium.

Answer: A

The two components of the neutral rate of interest are the real trend of growth in the underlying economy and long-run expected inflation.

11. A situation where reductions in interest rates fail to stimulate consumption is referred to as:

A. Money neutrality.

B. Quantitative easing.

C. Liquidity trap.

Answer: C

A liquidity trap refers to a situation where further injections of money into the economy do not reduce interest rates nor do they affect real economic activity.

12. Which monetary policy is the Fed *least likely* to adopt in an expansion?

A. Increase taxes

B. Increase FFR

C. Conduct an open market sale

Answer: A

Increasing taxes is a tool of **fiscal policy.**

13. The *most likely* discretionary fiscal policy in a recession is:

A. To increase the money supply.

B. To reduce government expenditure.

C. To reduce taxes.

Answer: C

Reducing taxes increases aggregate demand as disposable incomes rise.

Increasing money supply is a **monetary policy** tool.

A decrease in government expenditure is a **contractionary policy**.

14. Which of the following is *least likely* an automatic fiscal policy stabilizer?

    A. Unemployment compensation

    B. Income taxes

    C. Real interest rates

    Answer: C

    Real interest rates are not automatic stabilizers embedded in fiscal policy.

15. Which of the following statements regarding automatic stabilizers is *least accurate*?

    A. They tend to take the budget toward a surplus in a recession and a deficit in an expansion.

    B. There is no administrative lag associated with them.

    C. They stimulate the economy during a recession and cool it down during an expansion.

    Answer: A

    Automatic stabilizers take the budget toward a deficit in a recession and toward a surplus in an expansion.

16. Which of the following statements is *most accurate* regarding the government expenditure multiplier and the tax multiplier?

    A. The effects of the government expenditure multiplier outweigh those of the tax multiplier, which makes the balanced budget multiplier positive.

    B. The effects of the government expenditure multiplier are less significant than those of the tax multiplier, which makes the balanced budget multiplier negative.

    C. The effects of the government expenditure multiplier exactly offset those of the tax multiplier, which makes the balanced budget multiplier equal zero.

Answer: A

The effects of the government expenditure multiplier outweigh those of the tax multiplier, which makes the balanced budget multiplier positive.

17. Which of the following is *least likely* a reason for a government to worry about the size of the fiscal deficit relative to GDP?

    A. Government spending may crowd out private investment.

    B. Borrowed funds can be spent on capital investments, which may lead to an increase in the economy's productive capacity.

    C. Hyperinflation may result if the government loses credibility regarding its ability to finance the deficit.

    Answer: B

    Options A and C represent reasons to be concerned about the size of national debt. However, if borrowed funds are used to raise the economy's productive capacity in the long run, higher taxes in the future can be utilized to service the debt.

18. Consider the following statements:

    Statement 1: Compared to raising direct taxes, indirect taxes are more effective and efficient in generating revenue for the government.

    Statement 2: Compared to reducing direct taxes, increasing government spending has a more significant impact on aggregate output.

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Both statements are incorrect.

    C. Only one statement is correct.

    Answer: A

    Both statements are indeed correct.

19. All other factors remaining the same, which of the following combinations of the marginal propensity to consume (MPC) and the net tax rate (t) would lead to the lowest value for the fiscal multiplier in an economy?

	MPC	t
A.	Higher	Higher
B.	Lower	Higher
C.	Higher	Lower

Answer: B

Fiscal multiplier = 1/[1 – MPC(1 – t)]

- The lower the value of MPC, the lower the value of the fiscal multiplier.
- The higher the tax rate, the lower the value of the fiscal multiplier.

20. In order to identify a government's budgetary stance, economists are *most likely* to look at:

A. The cyclical budget balance.

B. The structural budget balance.

C. The balanced budget multiplier.

Answer: B

The structural or cyclically adjusted budget deficit is the deficit that would exist if the economy were operating at full employment. It adjusts for the impact of automatic stabilizers on the budgetary stance. Therefore, economists look at the cyclically adjusted budget deficit as an indicator of the government's fiscal stance.

21. The lag associated with implementation of a discretionary fiscal action is *most likely* known as:

A. The recognition lag.

B. The action lag.

C. The impact lag.

Answer: B

The lag associated with obtaining the required government approvals for fiscal actions is known as the action lag.

22. Which of the following combinations of fiscal and monetary policy is *most likely* to result in the proportional share of the public sector in the economy increasing, and the proportional share of the private sector in the economy decreasing?

	Fiscal Policy	**Monetary Policy**
A.	Easy	Tight
B.	Tight	Easy
C.	Easy	Easy

Answer: A

A decrease in taxes or an increase in government spending (fiscal easing) would increase aggregate demand.

If money supply was reduced and interest rates increased (monetary tightening) private sector demand would fall.

The end result would be higher output, higher interest rates, and government expenditure would form a larger component of national income.

Reading 20: International Trade and Capital Flows

1. Consider the following information:

   Output per Worker per Day

	Machinery	**Cloth**
U.K.	8	16
India	4	32

   Which of the following is *most likely*?

   A. The U.K. holds a comparative and absolute advantage in producing machinery, while India holds a comparative and absolute advantage in producing cloth.

   B. India holds a comparative and absolute advantage in producing machinery, while the U.K. holds a comparative and absolute advantage in producing cloth.

   C. The U.K. holds a comparative advantage in producing machinery, while India holds a comparative advantage in producing cloth. The U.K. holds an absolute advantage in producing cloth, while India holds an absolute advantage in producing machinery.

   Answer: A

   The U.K. holds an absolute advantage in producing machinery as it produces more machinery per worker per day than India.

   India holds an absolute advantage in producing machinery as it produces more cloth per worker per day than the U.K.

   The U.K. holds a comparative advantage in producing machinery as its opportunity cost of producing machinery is lower than India's. (2 units of cloth versus 8 units of cloth in India)

   India holds a comparative advantage in producing cloth as its opportunity cost of producing cloth is lower than the U.K.'s. (0.125 machines versus 0.5 machines in the U.K.)

2. Which of the following is *most likely* regarding the primary source of comparative advantage under the Ricardian and Heckscher-Ohlin models of trade?

	Ricardian Model	Heckscher-Ohlin Model
A.	Differences in technology	Differences in factor endowments
B.	Differences in factor endowments	Differences in technology
C.	Specialization	Division of labor

Answer: A

Differences in technology are the key source of comparative advantage under the Ricardian model. On the other hand, differences in factor endowments are the key source of comparative advantage under the Heckscher-Ohlin model of trade.

3. Consider the following statements:

Statement 1: The Heckscher-Ohlin model of trade assumes that labor is the only variable factor of production.

Statement 2: The Heckscher-Ohlin model of trade assumes that technology varies across industries.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

Answer: C

The Heckscher-Ohlin model of trade assumes that **both labor and capital** are variable factors of production. The **Ricardian model** assumes that labor is the only variable factor of production. Under the Heckscher-Ohlin model, technology is the same in each industry across countries, but it varies across different industries.

4. Quota rents arising from the imposition of a quota on imports may be

captured by:

A. Domestic importers only.

B. Foreign exporters only.

C. Domestic importers or foreign exporters.

Answer: C

Quota rents arising from a quota can be captured by the exporting country or the importing country.

5. Under which of the following types of trade restrictions is the welfare loss to the importing country *most likely* to be minimized?

   A. Tariffs

   B. Quotas

   C. Voluntary export restraints

   Answer: A

   Under a tariff, the government of the **importing country** earns revenue.

   Under a quota, quota rents can be captured by the **importing country or the exporting country**. Under a VER, the **exporting country** captures the quota rent.

6. A large country can *most likely* benefit by:

   A. Imposing a tariff on imports.

   B. Providing an export subsidy.

   C. Request its trading partners to impose VERs.

   Answer: A

   A large country can increase its own welfare if the improvement in terms of trade from imposing the tariff outweighs the associated deadweight loss, and if trading partners do not retaliate. Export subsidies and VERs will always reduce domestic welfare.

7. Three countries form a trade bloc where they eliminate all barriers to trade with each other, have similar policies regarding trade with non-member countries, but do not allow free movement of factors of

production within the bloc. Such an arrangement would *most likely* be classified as a:

A. Customs union.

B. Common market.

C. Economic union.

Answer: A

In a customs union barriers to trade between members of the bloc are eliminated, and all member countries have similar policies regarding trade with non-member countries.

A common market incorporates all the provisions of a customs union, and also allows free movement of factors of production among the member countries.

An economic union incorporates all the aspects of a common market and also requires common economic institutions and coordination of economic policies among member countries.

8. Purchases of goods and services are *most likely* to be recorded under which of the following components of the balance of payments?

A. Current account

B. Capital account

C. Financial account

Answer: A

Merchandise trade and services are recorded under the current account.

9. Official reserve assets are *most likely* to be recorded under which of the following components of the balance of payments?

A. Current account

B. Capital account

C. Financial account

Answer: C

Official reserve assets are recorded in the financial account.

10. Sales and purchases of intangible assets are *most likely* to be recorded under which of the following components of the balance of payments?

    A. Current account

    B. Capital account

    C. Financial account

    Answer: B

    Intangible assets such as patents and copyrights are recorded in the capital account.

11. Consider the following statements:

    Statement 1: A country can have a current account deficit and consume more than it produces if it lends the shortfall to foreigners.

    Statement 2: In an open economy, savings can be used for domestic and private investment. Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are correct.

    Answer: B

    A country can have a current account deficit and consume more than it produces ($C + I + G > Y$) if it **borrows** the shortfall **from** foreigners.

    In a closed economy, savings can only be used for domestic investment. In an open economy, savings can be used for **domestic and foreign investment**.

12. A current account deficit *least likely* results from:

    A. Low private savings.

    B. A government fiscal surplus.

    C. High private investment.

    Answer: B

    $CA = S_P + S_G - I$

    Therefore, a current account deficit results from:

- Low private savings
- A government deficit
- High private investment

13. When faced with a financial crisis, a country should *most likely*:

    A. Allow free movement of capital and let the exchange rate float freely.

    B. Impose capital controls and fix the exchange rate.

    C. Allow free movement of capital controls and fix the exchange rate.

    Answer: B

    In times of financial crisis, when there may be a flight of capital from the country, fixed exchange rates, when combined with capital controls, afford the central bank a degree of monetary policy independence that would not be possible without capital controls.

14. The primary objective of the World Bank is to:

    A. Enhance and liberalize international trade.

    B. Fight poverty and enhance environmentally sound economic growth.

    C. Ensure the stability of the international monetary system, and the system of exchange rates and international payments.

    Answer: B

    The World Bank's main objective is to fight poverty and enhance environmentally sound economic growth.

15. Which of the following is *least* likely a price control on capital?

    A. Special taxes on returns on international investments.

    B. Mandatory reserve requirements.

    C. Ceiling on borrowings from foreign lenders.

    Answer: C

    Ceilings on borrowings from foreign creditors is an example of **quantity** controls on capital.

16. Which of the following statements is untrue regarding gross national product (GNP)?

   A. GNP includes goods and services produced by citizens outside the country.

   B. GNP includes goods and services produced by foreigners within the country.

   C. GNP excludes goods and services produced by citizens outside the country.

   Answer: C

   GNP includes goods and services produced by citizens outside the country, as well as goods and services produced by foreigners within the country.

17. Countries that engage in international trade benefit from exchange and specialization. Which of the following is not a benefit of a country engaging in international trade?

   A. Trade enables a country to receive a higher price for its exports.

   B. Trade increases the power of domestic monopoly firms.

   C. Trade enables lower prices on imports relative to some domestically produced goods.

   Answer: B

   Increased foreign competition reduces the monopoly power of domestic firms and forces them to become more efficient.

18. Which of the following statements about absolute and comparative advantage between two nations is untrue?

   A. Absolute advantage is a country's ability to produce goods at lower costs than its trading partners.

   B. Comparative advantage is the ability to produce a good at a lower opportunity cost.

   C. Trade liberalization can lead to lower inflation-adjusted GDP.

   Answer: C

   Trade liberalization can lead to higher inflation-adjusted GDP due to a variety of positive influences associated with international trade.

19. Which of the following statements regarding the Ricardian and Heckscher-Ohlin models is untrue?

    A. The Heckscher-Ohlin model assumes that both capital and labor are variable factors of production.

    B. The Ricardian model assumes that labor is the only variable factor of production.

    C. The Ricardian model assumes that capital and labor are the only variable factors of production.

    Answer: C

    The Ricardian model assumes that labor is the only variable factor of production.

20. When a government issues a trade tariff versus a trade quota, what is its expectation for growth in tax revenue?

    A. Goes higher

    B. Stays unchanged

    C. Goes lower

    Answer: A

    The main difference between tariffs and quotas is that the government earns direct revenue through tariffs, but not with quotas.

21. For nations that are members of a Free Trade Area (FTA), which of the following statements is true?

    A. In an FTA, all member countries have similar policies regarding trade with nonmember countries.

    B. An FTA eliminates almost all barriers to trade with each other, but each nation maintains its own policies regarding trade with nonmember countries.

    C. An FTA incorporates all the provisions of a customs union and also allows free movement of factors of production among the member countries.

    Answer: B

An FTA eliminates almost all barriers to trade with each other, but each nation maintains its own policies regarding trade with nonmember countries.

22. Which of the following is not a common objective of capital restrictions imposed by governments?

    A. The government may impose ownership restrictions on strategic industries such as defense and telecommunications.

    B. The government may forbid foreign investment into certain industries to protect domestic companies from foreign competition and protect jobs.

    C. Market exchange rates are used to achieve policy objectives in times of macroeconomic crises.

    Answer: C

    One capital restriction that may be used is fixed exchange rate targets, not market or floating rates, to achieve policy objectives in times of macroeconomic crises.

23. If a country runs permanent current account deficits, which of the following statements is untrue?

    A. Higher interest rates lead to net capital inflows and an appreciating currency.

    B. There is an increase in net borrowing from foreigners.

    C. The country will ultimately see domestic currency appreciation.

    Answer: C

    A permanent increase in net borrowing from foreigners will ultimately cause significant risks for foreign investors due to rising debt levels and the threat of default. As compensation for accepting this risk, investors will push down the value of the domestic currency to increase expected return.

24. Consumer behavior can have a significant impact on the current account balance and interest rates through a high level of purchases of imported goods and a low level of purchases of domestic goods. Which of following statements is untrue in this regard?

A. Excess import purchases cause a current account deficit.

B. A nation’s trading partners save all the capital from the excess imports.

C. The demand for foreign currency lowers the domestic currency’s value.

Answer: B

Trading partners or nations running current account deficits do not save the profits from these activities, but rather loan them back to the host country. A modern-day example of this is the United States’s trade deficit with China and the trillions in U.S. debt China holds as a result.

25. What is the primary objective of the World Bank?

A. The World Bank’s primary objective is to enhance and liberalize international trade.

B. The World Bank’s primary objective is to ensure the stability of the international monetary system.

C. The World Bank’s main objective is to fight poverty and enhance environmentally sound economic growth.

Answer: C

The World Bank’s main objective is to fight poverty and enhance environmentally sound economic growth.

Reading 21: Currency Exchange Rates

1. Which of the following factors will *least likely* lead to a decrease in the real exchange rate (quoted as DC/FC)?

   A. A decrease in the foreign price level

   B. An increase in the domestic price level

   C. An increase in the nominal exchange rate (DC/FC)

2. Over a period of time, the nominal exchange rate (CAD/USD) has increased by 2%, the price level in the U.S. has decreased by 4%, while the price level in Canada has increased by 5%. The change in real exchange rate (CAD/USD) is *closest to*:

   A. 1.03%

   B. 2.98%

   C. −6.74%

3. A decline in the real USDJPY exchange rate *most likely*:

   A. Increases a U.S. investor's purchasing power relative to a Japanese investor's.

   B. Increases a Japanese investor's purchasing power relative to a U.S. investor's.

   C. Increases the JPY-denominated value of a Japanese investor's investments in the United States.

4. In order to eliminate exchange rate risk, a European firm that needs to make a payment in USD in 3 months is *most likely* to enter into:

   A. An option contract to sell USD in 3 months.

   B. A futures contract to purchase Euros in 3 months.

   C. A forward contract to purchase USD in 3 months.

5. Consider the following statements:

   Statement 1: Option contracts are contracts that, in return for an upfront premium or fee, give the purchaser the right, but not the obligation, to make an FX transaction at some pre-specified future date at an exchange rate agreed upon today.

Statement 2: Futures contracts are standardized contracts that trade on OTC markets.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

6. Which of the following is *least likely* a function of the foreign exchange market?

A. It allows market participants to hedge their exchange rate risk.

B. It facilitates domestic trade in goods and services.

C. It allows investors to convert between currencies to enable them to move funds into (or out of) foreign assets.

7. Which of the following is *least likely* a buy-side FX market participant?

A. A large multinational bank with a global client base that enters into FX transactions

B. A large hedge fund that accepts and manages FX for profit

C. A central bank that trades in the FX market to influence the level or trend in the domestic exchange rate

8. Consider the following statements:

Statement 1: A decrease in an indirect exchange rate quote implies that the domestic currency has appreciated.

Statement 2: Appreciation of the foreign currency will lead to a decrease in the direct exchange rate quote.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

9. A Japanese family visits the United States for a holiday. At the airport, they are told that 1 yen will buy 0.0124 USD. Which of the following is a direct exchange rate quote from the Japanese family's perspective?

   A. 0.0124 USD per yen

   B. 80.65 yen per USD

   C. 80.65 USD per yen

10. A dealer offers an exchange rate of USDJPY = 78.95–79.20. This *least likely* implies that:

    A. The dealer is willing to sell USD for 79.20 yen.

    B. The dealer is willing to buy JPY for 78.95 dollars.

    C. The dealer is willing to sell JPY for 0.01266 dollars.

11. A decline in the EURUSD exchange rate from 1.3425 to 1.3150 *most likely* implies that:

    A. The USD has appreciated by 2.09%.

    B. The EUR has appreciated by 2.05%.

    C. The USD has appreciated by 2.05%.

Use the following information to answer Questions 12 to 15:

A trader is quoted the following exchange rates:

	Spot Rate	Expected Spot Rate in One Year
EURUSD	1.3915	1.4028
GBPUSD	1.5540	1.5635
USDJPY	78.95	80.25

12. The expected spot EURJPY cross rate in one year is *closest to*:

    A. 112.5747

    B. 56.7373

    C. 109.8589

13. The spot EURGBP cross rate is *closest to*:

    A. 0.8972

B. 2.1624

C. 0.8954

14. The expected percentage change in the value of JPY relative to USD over the next year is *closest to*:

A. −1.62%

B. 1.65%

C. −1.65%

15. The percentage change in the value of EUR relative to GBP over the next year is *closest to*:

A. −0.20%

B. 0.20%

C. −0.28%

16. Consider the following statements:

Statement 1: If the forward rate is lower than the spot rate, the price currency is trading at a forward premium.

Statement 2: If the price currency is expected to depreciate, the number of forward points will be positive.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

17. A dealer quotes a spot CADUSD exchange rate of 1.0285 and a 3-month forward exchange rate of 1.0210. The 3-month forward points are *closest to*:

A. 0.0075

B. −75

C. −0.0075

18. A dealer quotes a 6-month forward USDEUR rate of 1.3215 and forward points equal to −44. The spot EURUSD exchange rate is

closest to:

A. 1.3259

B. 1.3171

C. 1.2775

19. A dealer quotes a 1-year forward JPYUSD exchange rate of 80.15 and 1-year forward premium of 3.5%. The JPYUSD spot exchange rate is *closest to*:

A. 82.96

B. 80.45

C. 77.44

20. A trader is provided with the following information:

Spot GBPUSD = 1.5142

90-day risk-free rate in the United States = 2.5%

90-day risk-free rate in the United Kingdom = 4.5%

Given that the interest rates are quoted on the basis of a 360-day year, the 90-day forward USDGBP exchange rate is *closest to*:

A. 1.5067

B. 0.6637

C. 1.4852

21. The absolute number of forward points is *most likely*:

A. Positively related to the term of the forward contract and positively related to the interest rate differential.

B. Negatively related to the term of the forward contract but positively related to the interest rate differential.

C. Positively related to the term of the forward contract but negatively related to the interest rate differential.

22. Which of the following is *least likely* a desirable property of an ideal exchange rate regime:

A. The exchange rate should be left to float freely.

B. The currencies should be fully convertible.

C. The countries should be able to undertake independent monetary policy to pursue domestic objectives.

23. Which of the following exchange rate regimes is *most likely* an arrangement with no separate legal tender?

A. Currency board

B. Monetary union

C. Fixed parity

24. Under which of the following exchange rate regimes is the exchange rate adjusted frequently in line with the inflation rate?

A. Currency board system

B. Floating rate system

C. Passive crawling peg

25. For exchange rates to play a major role in adjusting trade imbalances,

A. The elasticity of demand for imports should be relatively high, but that of exports should be relatively low.

B. The elasticity of demand for imports should be relatively low, but that of exports should be relatively high.

C. The elasticity of demand for imports and exports should be relatively high.

Reading 21: Currency Exchange Rates

1. Which of the following factors will *least likely* lead to a decrease in the real exchange rate (quoted as DC/FC)?

   A. A decrease in the foreign price level

   B. An increase in the domestic price level

   C. An increase in the nominal exchange rate (DC/FC)

   Answer: C

   The real exchange rate is:

   - An increasing function of the nominal exchange rate (in terms of DC/FC).
   - An increasing function of the foreign price level.
   - A decreasing function of the domestic price level.

2. Over a period of time, the nominal exchange rate (CAD/USD) has increased by 2%, the price level in the U.S. has decreased by 4%, while the price level in Canada has increased by 5%. The change in real exchange rate (CAD/USD) is *closest to*:

   A. 1.03%

   B. 2.98%

   C. −6.74%

   Answer: C

   Change in real exchange rate = $\{(1 + 0.02) \times [(1 - 0.04) / (1 + 0.05)]\} - 1 = -6.74\%$

3. A decline in the real USDJPY exchange rate *most likely*:

   A. Increases a U.S. investor's purchasing power relative to a Japanese investor's.

   B. Increases a Japanese investor's purchasing power relative to a U.S. investor's.

C. Increases the JPY-denominated value of a Japanese investor's investments in the United States

Answer: B

A decline in the USDJPY real exchange rate means that it now costs a Japanese investor less in real terms to buy U.S. goods. Therefore, in relative terms, the Japanese investor's purchasing power has increased.

A decrease in the USDJPY **nominal exchange rate** decreases the JPY-denominated value of a Japanese investor's investments in the United States.

4. In order to eliminate exchange rate risk, a European firm that needs to make a payment in USD in 3 months is *most likely* to enter into:

A. An option contract to sell USD in 3 months.

B. A futures contract to purchase Euros in 3 months.

C. A forward contract to purchase USD in 3 months.

Answer: C

A European firm that needs to make a payment in USD in 3 months will purchase USD and sell Euros in the forward or futures market to hedge its foreign exchange risk.

5. Consider the following statements:

Statement 1: Option contracts are contracts that, in return for an upfront premium or fee, give the purchaser the right, but not the obligation, to make an FX transaction at some pre-specified future date at an exchange rate agreed upon today.

Statement 2: Futures contracts are standardized contracts that trade on OTC markets.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

Futures contracts are standardized contracts that trade on **exchanges**. This is in contrast to forward contracts that are customized and are traded in the OTC market.

6. Which of the following is *least likely* a function of the foreign exchange market?

   A. It allows market participants to hedge their exchange rate risk.

   B. It facilitates domestic trade in goods and services.

   C. It allows investors to convert between currencies to enable them to move funds into (or out of) foreign assets.

   Answer: B

   FX markets facilitate **international** trade in goods and services, allowing individuals and companies to purchase items produced in foreign countries.

7. Which of the following is *least likely* a buy-side FX market participant?

   A. A large multinational bank with a global client base that enters into FX transactions

   B. A large hedge fund that accepts and manages FX for profit

   C. A central bank that trades in the FX market to influence the level or trend in the domestic exchange rate

   Answer: A

   Large multinational banks with a global client base are classified as sell-side FX market participants.

8. Consider the following statements:

   Statement 1: A decrease in an indirect exchange rate quote implies that the domestic currency has appreciated.

   Statement 2: Appreciation of the foreign currency will lead to a decrease in the direct exchange rate quote.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

A decrease in an indirect exchange rate quote (FC/DC) implies that the domestic currency has **depreciated**.

Appreciation of the foreign currency will lead to an **increase** in the direct exchange rate quote (DC/FC).

9. A Japanese family visits the United States for a holiday. At the airport, they are told that 1 yen will buy 0.0124 USD. Which of the following is a direct exchange rate quote from the Japanese family's perspective?

A. 0.0124 USD per yen

B. 80.65 yen per USD

C. 80.65 USD per yen

Answer: B

0.0124USDJPY is an indirect exchange rate quote for the Japanese family.

A direct exchange rate quote has domestic currency as the price currency and foreign currency as the base currency. It is the reciprocal of the indirect exchange rate quote.

10. A dealer offers an exchange rate of USDJPY = 78.95–79.20. This *least likely* implies that:

A. The dealer is willing to sell USD for 79.20 yen.

B. The dealer is willing to buy JPY for 78.95 dollars.

C. The dealer is willing to sell JPY for 0.01266 dollars.

Answer: B

The exchange rate quote implies that the dealer is willing to:

- Buy the base currency (USD) for 78.95 yen.
- Sell the base currency (USD) for 79.20 yen.
- Sell the price currency (JPY) for 0.01266 dollars.
- Buy the price currency (JPY) for 0.01263 dollars.

11. A decline in the EURUSD exchange rate from 1.3425 to 1.3150 *most likely* implies that:

    A. The USD has appreciated by 2.09%.

    B. The EUR has appreciated by 2.05%.

    C. The USD has appreciated by 2.05%.

    Answer: A

    A decline in the EURUSD exchange rate from 1.3425 to 1.3150 implies that the base currency (EUR) has depreciated. The unannualized percentage decrease in the value of EUR relative to USD is calculated as:

    $(1.3150/1.3425) - 1 = -2.05\%$

    Alternatively, the USD:EUR exchange rate has increased from 0.7449 to 0.7605. The unannualized percentage increase in the value of USD relative to EUR is calculated as:

    $(0.7605/0.7449) - 1 = 2.09\%$

Use the following information to answer Questions 12 to 15:

A trader is quoted the following exchange rates:

	Spot Rate	**Expected Spot Rate in One Year**
EURUSD	1.3915	1.4028
GBPUSD	1.5540	1.5635
USDJPY	78.95	80.25

12. The expected spot EURJPY cross rate in one year is *closest to*:

    A. 112.5747

    B. 56.7373

    C. 109.8589

    Answer: A

    JPY/EUR = USD/EUR × JPY/USD

    JPY/EUR = 1.4028 × 80.25 = 112.5747

13. The spot EURGBP cross rate is *closest to*:

A. 0.8972

B. 2.1624

C. 0.8954

Answer: C

GBP/EUR = USD/EUR × $(USD/GBP)^{-1}$

GBP/EUR = 1.3915 × (1/1.5540) = 0.8954

14. The expected percentage change in the value of JPY relative to USD over the next year is *closest to*:

A. −1.62%

B. 1.65%

C. −1.65%

Answer: A

Percentage change in JPY = [(1/80.25) / (1/78.95)] – 1 = −1.62%

15. The percentage change in the value of EUR relative to GBP over the next year is *closest to*:

A. −0.20%

B. 0.20%

C. −0.28%

Answer: B

Spot EURGBP cross rate = 0.8954

Expected spot EURGBP cross rate in one year = 1.4028 × (1/1.5635) = 0.8972

Therefore, percentage change in EUR= (0.8972 / 0.8954) – 1 = 0.20%

16. Consider the following statements:

Statement 1: If the forward rate is lower than the spot rate, the price currency is trading at a forward premium.

Statement 2: If the price currency is expected to depreciate, the number of forward points will be positive.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

If the forward rate is lower than the spot rate, the base currency is expected to depreciate and is said to be trading at a forward discount. At the same time, the price currency is expected to appreciate and is said to be trading at a forward premium.

If the price currency is expected to depreciate, the forward rate will be higher than the spot rate, and forward points will be positive.

17. A dealer quotes a spot CADUSD exchange rate of 1.0285 and a 3-month forward exchange rate of 1.0210. The 3-month forward points are *closest to*:

A. 0.0075

B. −75

C. −0.0075

Answer: B

Forward points = (1.0210 – 1.0285) × 10,000 = −75 points

18. A dealer quotes a 6-month forward USDEUR rate of 1.3215 and forward points equal to −44. The spot EURUSD exchange rate is *closest to*:

A. 1.3259

B. 1.3171

C. 1.2775

Answer: A

Spot rate = 1.3215 – (−44 / 10,000) = 1.3259

19. A dealer quotes a 1-year forward JPYUSD exchange rate of 80.15 and

1-year forward premium of 3.5%. The JPYUSD spot exchange rate is *closest to*:

A. 82.96

B. 80.45

C. 77.44

Answer: C

Spot rate = 80.15 / (1 + 0.035) = 77.44

20. A trader is provided with the following information:

Spot GBPUSD = 1.5142

90-day risk-free rate in the United States = 2.5%

90-day risk-free rate in the United Kingdom = 4.5%

Given that the interest rates are quoted on the basis of a 360-day year, the 90-day forward USDGBP exchange rate is *closest to*:

A. 1.5067

B. 0.6637

C. 1.4852

Answer: B

$$F_{USD/GBP} = 1.5142 \times \frac{[1 + 0.025(90/360)]}{[1 + 0.045(90/360)]} = 1.5067$$

$$\mathbf{F}_{\mathbf{GBP/USD}} = 1/1.5067 = 0.6637$$

21. The absolute number of forward points is *most likely*:

A. Positively related to the term of the forward contract and positively related to the interest rate differential.

B. Negatively related to the term of the forward contract but positively related to the interest rate differential.

C. Positively related to the term of the forward contract but negatively related to the interest rate differential.

Answer: A

Given the interest rate differential, the longer the term of the contract, the higher the absolute number of forward points.

Given the same term to maturity, the higher the interest rate differential, the higher the absolute number of forward points.

22. Which of the following is *least likely* a desirable property of an ideal exchange rate regime:

    A. The exchange rate should be left to float freely.

    B. The currencies should be fully convertible.

    C. The countries should be able to undertake independent monetary policy to pursue domestic objectives.

    Answer: A

    Under an ideal exchange rate regime, the exchange rate between two currencies should be **credibly fixed**.

23. Which of the following exchange rate regimes is *most likely* an arrangement with no separate legal tender?

    A. Currency board

    B. Monetary union

    C. Fixed parity

    Answer: B

    Dollarization and monetary unions are example of arrangements that do not require a separate legal tender.

24. Under which of the following exchange rate regimes is the exchange rate adjusted frequently in line with the inflation rate?

    A. Currency board system

    B. Floating rate system

    C. Passive crawling peg

    Answer: C

    Under a **passive crawling peg** system, the exchange rate is adjusted frequently to the rate of inflation in the economy.

25. For exchange rates to play a major role in adjusting trade imbalances,

A. The elasticity of demand for imports should be relatively high, but that of exports should be relatively low.

B. The elasticity of demand for imports should be relatively low, but that of exports should be relatively high.

C. The elasticity of demand for imports and exports should be relatively high.

Answer: C

The more elastic the demand for imports and exports, the greater the role that exchange rates can play in adjusting trade imbalances.

For example, in an economy with a trade deficit, depreciation of the domestic currency would make exports cheaper and imports more expensive. If demand is for both imports and exports is relatively elastic, there will be an increase in total revenue from exports and a decrease in total expenditure on imports, which would move the trade balance toward a surplus.

Financial Reporting and Analysis

Reading 22: Financial Statement Analysis: An Introduction

1. The role of financial reporting is *most likely*:
   A. To help users in making forecasts about the future performance of the company.
   B. To provide information that is useful to a wide range of users in making economic decisions.
   C. To provide historical trends about the company's performance.
2. Which of the following statements *most likely* describes the role of the income statement?
   A. It reports the financial performance of the firm over a period of time.
   B. It reports the financial position of the firm at a certain point in time.
   C. It reports the company's cash inflows and outflows.
3. If a user wants to know about the current position of a company's assets, she is *most likely* to refer to the:
   A. Balance sheet.
   B. Cash flow statement.
   C. Income statement.
4. Financial statement footnotes *least likely* include:
   A. Information about the methods and assumptions used by the management.
   B. Information about the accounting estimates used by the management.
   C. Management discussion regarding accounting policies that require significant judgment.
5. Information about extraordinary items and other unusual or

infrequent events is *most likely* found in:

A. Supplementary schedules.

B. Financial statement footnotes.

C. Management Discussion & Analysis.

6. An audit is *most likely* described as:

A. A review of the financial statements by an internal auditor of the entity to check their accuracy.

B. An independent review of an entity's financial statements.

C. A review of the financial statements by a senior director of the entity with the purpose of stating an opinion on their fairness and reliability.

7. If an auditor feels that a company's financial statements are not presented fairly or significantly deviate from accounting standards, she will *most likely* issue a(n):

A. Qualified opinion.

B. Unqualified opinion.

C. Adverse opinion.

8. Which of the following is *least likely* a step in financial statement analysis framework?

A. Processing the data

B. Forecasting data

C. Interpreting data

9. Which of the following decisions *least likely* requires the analysis of financial statements?

A. Estimating the useful life of a noncurrent asset

B. Assigning a debt rating to a company or bond issue

C. Extending credit to a customer

10. Liquidity *most likely* refers to a company's ability to:

A. Meet its long-term debt obligations.

B. Meet its short-term obligations.

C. Issue bonds in the capital market.

11. A company's solvency *most likely* refers to its ability to:

    A. Meet its short-term obligations.

    B. Sell its inventory at market prices in a short period of time.

    C. Meet its long-term obligations.

12. Which of the following financial statements is the analyst *least likely* to review to assess a company's performance over a period of time?

    A. Income statement

    B. Balance sheet

    C. Statement of cash flows

13. Which of the following financial statements is the analyst *most likely* to review to assess changes in a company's financial position?

    A. Balance sheet

    B. Income statement

    C. Statement of changes in owners' equity

14. A company's operating income is *most* useful in the analysis of:

    A. Its underlying performance relative to the amount of debt in its capital structure.

    B. The effects of taxes on its financial results.

    C. Its underlying performance independent of the use of financial leverage.

15. Owners' equity is best described as:

    A. Liabilities in excess of the company's assets.

    B. Owners' residual interest in the assets of an entity after deducting its liabilities.

    C. A company's noncurrent assets less its noncurrent liabilities.

16. Details relating to a company's revenue recognition policies are *most likely* found in:

A. Management Discussion & Analysis.

B. Supplementary schedules.

C. Financial statement footnotes.

17. Information regarding material events and uncertainties is *most likely* found in:

    A. Management Discussion & Analysis.

    B. Supplementary schedules.

    C. Financial statement footnotes.

18. The objective of an audit is *most likely* to:

    A. State that the financial statements are correct.

    B. Provide absolute assurance about the accuracy or precision of the financial statements.

    C. Enable an auditor to express an opinion on the fairness and reliability of the financial statements.

19. An audit can *most likely* be described as:

    A. A review of the financial statements by the audit committee consisting of independent directors.

    B. A review of the financial statements by a qualified director of the company to express an opinion on their fairness and reliability.

    C. An independent review of the company's financial statements.

20. In which of the following circumstances is an auditor *least likely* to issue an unqualified audit opinion?

    A. The auditor is reasonably sure that the financial statements are presented fairly.

    B. The auditor believes that the financial statements contain some exceptions to the accounting standards.

    C. The auditor believes that the financial statements are free from material errors.

21. If an auditor believes that the financial statements materially depart

from accounting standards and are not presented fairly, she is *most likely* to issue a(n):

A. Qualified opinion.

B. Adverse opinion.

C. Unqualified opinion.

22. Information regarding management compensation is *most likely* to be found in the:

A. Proxy statement.

B. Financial statement footnotes.

C. Form 8-K.

23. Ratio analysis is *most likely* to be performed after which of the following steps in the financial statement analysis framework?

A. Processing data

B. Collecting data

C. Interpreting data

24. Financial data tables are an output of which of the following steps in the financial statement analysis framework?

A. Analyzing data

B. Processing data

C. Collecting data

25. Forecasts are used in which of the following steps in the financial statement analysis framework?

A. Processing data

B. Developing and communicating conclusions and recommendations

C. Analyzing data

26. Common-size statements are an input for which step in the financial statement analysis framework?

A. Collecting data

B. Analyzing data

C. Processing data

27. Which of the following statements regarding a company's internal controls is *most accurate*?

    A. Under U.S. GAAP, an independent auditor is responsible for the effectiveness of a company's internal controls system.

    B. The internal controls system seeks to ensure the reliability of the company's processes for analyzing financial statements.

    C. Under U.S. GAAP, an auditor is also required to express an opinion on the company's internal controls system.

Reading 22: Financial Statement Analysis: An Introduction

1. The role of financial reporting is *most likely*:

   A. To help users in making forecasts about the future performance of the company.

   B. To provide information that is useful to a wide range of users in making economic decisions.

   C. To provide historical trends about the company's performance.

   Answer: B

   The role of financial reporting is to provide information about the financial position, performance, and changes in financial position of an entity that is useful to a wide range of users in making economic decisions.

2. Which of the following statements *most likely* describes the role of the income statement?

   A. It reports the financial performance of the firm over a period of time.

   B. It reports the financial position of the firm at a certain point in time.

   C. It reports the company's cash inflows and outflows.

   Answer: A

   The income statement reports the financial performance of a company over a period of time. The financial position of the firm at a given point in time is reported on the balance sheet, while the company's cash inflows and outflows are reflected in its cash flow statement.

3. If a user wants to know about the current position of a company's assets, she is *most likely* to refer to the:

   A. Balance sheet.

B. Cash flow statement.

C. Income statement.

Answer: A

Information about the company's assets, liabilities, and owners' equity is contained in the balance sheet.

4. Financial statement footnotes *least likely* include:

   A. Information about the methods and assumptions used by the management.

   B. Information about the accounting estimates used by the management.

   C. Management discussion regarding accounting policies that require significant judgment.

   Answer: C

   Discussion of accounting policies that require significant judgment by management is included in the Management Discussion & Analysis section.

5. Information about extraordinary items and other unusual or infrequent events is *most likely* found in:

   A. Supplementary schedules.

   B. Financial statement footnotes.

   C. Management Discussion & Analysis.

   Answer: C

   Information regarding extraordinary items and unusual or infrequent events is typically found in the Management Discussion & Analysis section.

6. An audit is *most likely* described as:

   A. A review of the financial statements by an internal auditor of the entity to check their accuracy.

   B. An independent review of an entity's financial statements.

   C. A review of the financial statements by a senior director of the entity with the purpose of stating an opinion on their fairness and reliability.

Answer: B

An audit is an independent review of an entity's financial statements that enables the auditor to state an opinion on their fairness and reliability.

7. If an auditor feels that a company's financial statements are not presented fairly or significantly deviate from accounting standards, she will *most likely* issue a(n):

   A. Qualified opinion.

   B. Unqualified opinion.

   C. Adverse opinion.

   Answer: C

   A qualified opinion is issued if the statements have been presented fairly, but do contain exceptions to the accounting principles.

   The auditor issues an unqualified opinion if the statements have been presented fairly.

8. Which of the following is *least likely* a step in financial statement analysis framework?

   A. Processing the data

   B. Forecasting data

   C. Interpreting data

   Answer: B

   Forecasting data is not a part of the financial statement analysis framework.

9. Which of the following decisions *least likely* requires the analysis of financial statements?

   A. Estimating the useful life of a noncurrent asset

   B. Assigning a debt rating to a company or bond issue

   C. Extending credit to a customer

Answer: A

Estimates regarding the useful life of noncurrent assets are determined by management.

10. Liquidity *most likely* refers to a company's ability to:

    A. Meet its long-term debt obligations.

    B. Meet its short-term obligations.

    C. Issue bonds in the capital market.

    Answer: B

    Liquidity refers to a company's ability to meet its short-term obligations.

11. A company's solvency *most likely* refers to its ability to:

    A. Meet its short-term obligations.

    B. Sell its inventory at market prices in a short period of time.

    C. Meet its long-term obligations.

    Answer: C

    Solvency refers to a company's ability to meet its long-term obligations.

12. Which of the following financial statements is the analyst *least likely* to review to assess a company's performance over a period of time?

    A. Income statement

    B. Balance sheet

    C. Statement of cash flows

    Answer: B

    The balance sheet shows the company's financial position at a point in time.

13. Which of the following financial statements is the analyst *most likely* to review to assess changes in a company's financial position?

    A. Balance sheet

    B. Income statement

C. Statement of changes in owners' equity

Answer: C

The statement of changes in owners' equity reports changes in the owners' investment in the business over time as well as changes in the company's financial position.

14. A company's operating income is *most* useful in the analysis of:

    A. Its underlying performance relative to the amount of debt in its capital structure.

    B. The effects of taxes on its financial results.

    C. Its underlying performance independent of the use of financial leverage.

    Answer: C

    A company's operating income sheds light on the underlying performance of the company independent of its degree of financial leverage.

15. Owners' equity is best described as:

    A. Liabilities in excess of the company's assets.

    B. Owners' residual interest in the assets of an entity after deducting its liabilities.

    C. A company's noncurrent assets less its noncurrent liabilities.

    Answer: B

    Owners' equity is described as the owners' residual interest in the assets of an entity after deducting all liabilities.

16. Details relating to a company's revenue recognition policies are *most likely* found in:

    A. Management Discussion & Analysis.

    B. Supplementary schedules.

    C. Financial statement footnotes.

    Answer: C

Information about the company's accounting policies is generally presented in the financial statement footnotes.

17. Information regarding material events and uncertainties is *most likely* found in:

    A. Management Discussion & Analysis.

    B. Supplementary schedules.

    C. Financial statement footnotes.

    Answer: A

    Information regarding inflation, future goals, material events, and uncertainties is found in the Management Discussion & Analysis section.

18. The objective of an audit is *most likely* to:

    A. State that the financial statements are correct.

    B. Provide absolute assurance about the accuracy or precision of the financial statements.

    C. Enable an auditor to express an opinion on the fairness and reliability of the financial statements.

    Answer: C

    The objective of an audit of financial statements is to enable the auditor to express an opinion on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework.

19. An audit can *most likely* be described as:

    A. A review of the financial statements by the audit committee consisting of independent directors.

    B. A review of the financial statements by a qualified director of the company to express an opinion on their fairness and reliability.

    C. An independent review of the company's financial statements.

    Answer: C

    An audit is an independent review of a company's financial statements.

20. In which of the following circumstances is an auditor *least likely* to issue an unqualified audit opinion?

    A. The auditor is reasonably sure that the financial statements are presented fairly.

    B. The auditor believes that the financial statements contain some exceptions to the accounting standards.

    C. The auditor believes that the financial statements are free from material errors.

    Answer: B

    If the auditor believes that the financial statements contain some exceptions to the accounting standards, she will issue a qualified opinion.

21. If an auditor believes that the financial statements materially depart from accounting standards and are not presented fairly, she is *most likely* to issue a(n):

    A. Qualified opinion.

    B. Adverse opinion.

    C. Unqualified opinion.

    Answer: B

    If the auditor believes that the financial statements materially depart from accounting standards and are not presented fairly, she will issue an adverse opinion.

22. Information regarding management compensation is *most likely* to be found in the:

    A. Proxy statement.

    B. Financial statement footnotes.

    C. Form 8-K.

    Answer: A

    Information regarding management compensation is found in the proxy statement.

23. Ratio analysis is *most likely* to be performed after which of the following steps in the financial statement analysis framework?

   A. Processing data

   B. Collecting data

   C. Interpreting data

   Answer: B

   Ratio analysis is performed once the analyst has collected all the data.

24. Financial data tables are an output of which of the following steps in the financial statement analysis framework?

   A. Analyzing data

   B. Processing data

   C. Collecting data

   Answer: C

   Financial data tables are an output of the data-collecting phase of the financial statement analysis framework.

25. Forecasts are used in which of the following steps in the financial statement analysis framework?

   A. Processing data

   B. Developing and communicating conclusions and recommendations

   C. Analyzing data

   Answer: C

   Forecasts are an output from the processing-data phase in the financial statement analysis framework and are used to analyze data.

26. Common-size statements are an input for which step in the financial statement analysis framework?

   A. Collecting data

   B. Analyzing data

   C. Processing data

   Answer: B

Common-size statements are an output of the processing-data phase in the financial statement analysis framework and are used to analyze data.

27. Which of the following statements regarding a company's internal controls is *most accurate*?

    A. Under U.S. GAAP, an independent auditor is responsible for the effectiveness of a company's internal controls system.

    B. The internal controls system seeks to ensure the reliability of the company's processes for analyzing financial statements.

    C. Under U.S. GAAP, an auditor is also required to express an opinion on the company's internal controls system.

    Answer: C

    The effectiveness of a company's internal controls system is the responsibility of **management**.

    The internal controls system seeks to ensure the reliability of the company's processes of **preparing** financial statements.

Reading 23: Financial Reporting Mechanics

1. ABC Company is a manufacturer of heavy machinery and frequently invests large amounts of capital to purchase equipment. In 2008, it borrowed $5 million from a bank. This transaction is *most likely* to be classified as a(n):

   A. Investing activity.

   B. Operating activity.

   C. Financing activity.

2. Cheryl makes an advance payment for rent for the upcoming 6 months. In her books, this payment will *most likely* be classified as a(n):

   A. Liability.

   B. Expense.

   C. Asset.

3. Brian is trying to establish his start-up company. As the business is low on liquidity, Brian has told his employees that he will pay them their combined salaries after 3 months, as he expects the business to start generating sufficient cash flow by that time. For these 3 months, Brian will *least likely* classify these salaries as:

   A. Accrued revenue.

   B. Accrued expenses.

   C. Liability.

4. Unearned revenue is *most likely* classified as a(n):

   A. Asset.

   B. Liability.

   C. Owners' equity.

5. Owners' equity *least likely* includes:

   A. Retained earnings.

B. Long-term debt.

C. Other comprehensive income.

6. According to the accounting equation, a firm's assets are *least likely* equal to:

   A. Liabilities + Beginning retained earnings – Ending retained earnings – Dividends declared

   B. Ending retained earnings + Contributed capital + Liabilities

   C. Liabilities + Contributed capital + Beginning retained earnings + Revenues – Expenses – Dividends declared

7. To balance the accounting equation, an increase in a firm's liabilities is *least likely* to be accompanied by:

   A. An increase in its assets only.

   B. An increase in its owners' equity only.

   C. A decrease in its owners' equity only.

8. An analyst collected the following information regarding ABC Company:

Total assets	$700,000
Contributed Capital	$150,000
Total liabilities	$300,000

   Assuming the company did not pay any dividends, its ending retained earnings are *closest to*:

   A. $450,000

   B. $550,000

   C. $250,000

9. Data is entered into the initial trial balance from:

   A. Journal entries.

   B. Draft financial statements.

   C. General ledger.

10. Which of the following is *least likely* to be classified as an operating activity for a car manufacturer?

    A. Payment of taxes on income

    B. Purchase of equipment for manufacturing cars

    C. Sale of cars to customers

11. Which of the following is *most likely* regarding the classification of business activities for a bank?

	Operating Activity	Financing Activity
A	Borrowing funds to purchase new office premises	Payment of interest on borrowed funds
B	Purchase of office furniture	Dividend payments
C	Interest received on loans	Issuance of common stock

12. Which of the following is the *most likely* classification for a clothing manufacturer borrowing funds to purchase raw material?

    A. Operating activity

    B. Investing activity

    C. Financing activity

13. Which of the following is *least likely* an investing activity?

    A. Interest received on a bond investment by a clothing manufacturer

    B. Purchase of computer chips for a computer manufacturer

    C. Purchase of cars for the company's directors

14. Heavy Metal Ltd. is a manufacturer of machinery which is used in the construction industry. It frequently borrows funds from ABS Bank. Which of the following is the *most likely* classification of this transaction for the two entities?

	Heavy Metal Pvt. Ltd.	ABS Bank Pvt. Ltd.
A	Operating activity	Financing activity
B	Financing activity	Operating activity
C	Investing activity	Operating activity

15. An increase in a company's expenses is *least likely* to be accompanied by which of the following in order to keep the accounting equation in balance?

    A. An increase in the company's assets only

    B. An increase in the company's liabilities only

    C. An increase in the company's revenues only

16. A decrease in a company's liabilities is *least likely* to be accompanied by which of the following to keep the accounting equation in balance?

    A. An increase in contributed capital only

    B. A decrease in revenue only

    C. A decrease in assets only

17. Which of the following is *most likely* an accurate representation of the accounting equation?

    A. Assets + Liabilities = Contributed capital + Beginning retained earnings + Revenue – Expenses – Dividends

    B. Assets – Contributed capital – Beginning retained earnings – Revenue + Expenses + Dividends declared = Liabilities

    C. Assets – Liabilities = Contributed capital – Beginning retained earnings + Revenue – Expenses – Dividends declared

18. Owners' equity is *least likely* equal to:

    A. Contributed capital – Beginning retained earnings + Revenue – Expenses – Dividends declared

    B. Assets – Liabilities

    C. Contributed capital + Beginning retained earnings + Net income – Dividends declared

19. The following information relates to Hawaiian Clothing Inc. for the year 2009:

    Net Income = $95,000,000

    Beginning retained earnings = $240,000,000

Dividends paid = $20,000,000

Dividends declared = $30,000,000

The company's ending retained earnings for 2009 are *closest to*:

A. $315,000,000

B. $115,000,000

C. $305,000,000

20. An analyst gathers the following information about Excellent Juice Inc. for 2009:

Assets = $870,000

Liabilities = $226,000

Contributed capital = $180,000

Beginning retained earnings = $332,000

Dividends declared = $94,000

The company's net income for 2009 is *closest to*:

A. $38,000

B. $132,000

C. $226,000

21. JB Associates paid $30,000 wages in advance for 6 months. This transaction is *most likely* to result in:

A. An increase in net assets.

B. A decrease in net assets.

C. No change in net assets.

22. Jelena borrowed $45,000 from a bank to start her own business. This transaction is *least likely* to:

A. Increase assets by $45,000.

B. Increase owners' equity by $45,000.

C. Increase liabilities by $45,000.

23. Creamy Cakes Inc. received $4,500 in advance for delivery of 100

cakes the following week. Which of the following statements is *least accurate* regarding the initial effects of this transaction on Creamy Cakes' financial statements for the current week?

A. Liabilities will increase by $4,500.

B. Assets will increase by $4,500.

C. There will be no effect on assets.

24. Rigs Inc. is a manufacturer of heavy machinery. It collects 50% of the invoiced amount in advance when customers place their orders and collects the remaining 50% upon delivery of the product. It only recognizes the sale on its financial statements once the product is delivered. The *most likely* effect of a customer placing an order worth $7,000 on its financial statements is:

A. No effect on liabilities.

B. An increase in assets of $7,000.

C. An increase in liabilities of $3,500.

25. During 2009, Trendy Clothing Inc. made cash sales worth $84,000 with a gross profit margin of 20%. The *most likely* effect on total assets as a result of this transaction is:

A. No change in assets.

B. An increase in total assets by $84,000.

C. An increase in total assets by $16,800.

26. During 2009, Home Appliances Inc. made credit sales worth $96,000. The cost of the products was $72,000. The *most likely* effect of this transaction on total assets is:

A. An increase in total assets of $96,000.

B. A decrease in total assets of $72,000.

C. An increase in total assets of $24,000.

27. Huang Lee subscribed to research services provided by Capital Investments Ltd. and paid $1,200 in advance for a 6-month subscription. Which of the following is the *most appropriate* classification of this transaction by Lee and Capital Investments

respectively?

	Huang Lee	Capital Investments Pvt. Ltd.
A	Accrued expense	Accrued revenue
B	Prepaid expense	Deferred revenue
C	Accrued revenue	Unearned expense

28. Stacey opened a small flower shop and hired Peter for delivery of flowers to customers. After 1 month the business was still low on liquidity so Stacey promised Peter to pay his salary for the first 2 months at the end of the second month. At the end of the first month Stacey and Peter will *most likely* classify the month's wages as:

	Stacey	Peter
A	Accrued expense	Accrued revenue
B	Deferred expense	Deferred revenue
C	Unearned revenue	Accrued expense

29. During 2009, Antique Furniture Inc. made sales worth $270,000. At year end, the company had yet to receive cash amounting to $80,000 from customers. This outstanding amount will *most likely* be recorded on the financial statements as:

   A. Accrued revenue, liability.

   B. Deferred revenue, asset.

   C. Accrued revenue, asset.

30. Deferred revenue is *most likely* classified as:

   A. A liability.

   B. An asset.

   C. Owners' equity.

31. If a company has not paid cash for an expense that it has already incurred, it is *most likely* to classify it as a(n):

   A. Accrued expense, a liability.

   B. Deferred expense, an asset.

C. Accrued revenue, a liability.

32. Which of the following statements is *most accurate*?

    A. A general ledger shows all business transactions by date.

    B. T-accounts are representations of journal accounts.

    C. Entries are recorded in the general journal as they occur.

33. Which of the following statements regarding a trial balance is *least accurate*?

    A. A trial balance lists account balances at a particular point in time.

    B. Entries are recorded in the trial balance from the general journal.

    C. A trial balance shows only the ending balances of various accounts.

34. If a company reports a fictitious expense, which of the following is it *least likely* to do in order to cover up the fraud?

    A. Overstate its liabilities

    B. Overstate its assets

    C. Understate its assets

35. A company received cash for sale of goods, but it does not want to show the proceeds as revenue on its financial statements. Which of the following would *most likely* cover up its intended fraud?

    A. Increase its assets

    B. Decrease its liabilities

    C. Create a fictitious liability

Reading 23: Financial Reporting Mechanics

1. ABC Company is a manufacturer of heavy machinery and frequently invests large amounts of capital to purchase equipment. In 2008, it borrowed $5 million from a bank. This transaction is *most likely* to be classified as a(n):

   A. Investing activity.

   B. Operating activity.

   C. Financing activity.

   Answer: C

   The firm's operating activity is to manufacture heavy machinery. If it borrows money to finance its operating activities, the transaction will be classified as a financing activity.

2. Cheryl makes an advance payment for rent for the upcoming 6 months. In her books, this payment will *most likely* be classified as a(n):

   A. Liability.

   B. Expense.

   C. Asset.

   Answer: C

   Rent paid in advance is a prepaid expense, which is classified as an asset.

3. Brian is trying to establish his start-up company. As the business is low on liquidity, Brian has told his employees that he will pay them their combined salaries after 3 months, as he expects the business to start generating sufficient cash flow by that time. For these 3 months, Brian will *least likely* classify these salaries as:

   A. Accrued revenue.

   B. Accrued expenses.

C. Liability.

Answer: A

Accrued revenue is recognized when an entity has already provided goods or services and is waiting to receive cash. On the other hand, accrued expenses are recognized when services have already been received by the company, but the related cash payment is still to be made. Accrued expenses are a liability.

4. Unearned revenue is *most likely* classified as a(n):

   A. Asset.

   B. Liability.

   C. Owners' equity.

   Answer: B

   Unearned revenue represents income received in advance; the entity still has to provide a good or service. Therefore, unearned revenue is a liability.

5. Owners' equity *least likely* includes:

   A. Retained earnings.

   B. Long-term debt.

   C. Other comprehensive income.

   Answer: B

   Long-term debt is a noncurrent liability, while retained earnings and other comprehensive income are a part of owners' equity.

6. According to the accounting equation, a firm's assets are *least likely* equal to:

   A. Liabilities + Beginning retained earnings – Ending retained earnings – Dividends declared

   B. Ending retained earnings + Contributed capital + Liabilities

   C. Liabilities + Contributed capital + Beginning retained earnings + Revenues – Expenses – Dividends declared

   Answer: A

Assets = Liabilities + Owners' equity

Option A does not conform to the accounting equation

7. To balance the accounting equation, an increase in a firm's liabilities is *least likely* to be accompanied by:

   A. An increase in its assets only.

   B. An increase in its owners' equity only.

   C. A decrease in its owners' equity only.

   Answer: B

   An increase in a firm's liabilities must either be accompanied by a corresponding increase in its assets, a decrease in owners' equity, or both.

8. An analyst collected the following information regarding ABC Company:

Total assets	$700,000
Contributed Capital	$150,000
Total liabilities	$300,000

   Assuming the company did not pay any dividends, its ending retained earnings are *closest to*:

   A. $450,000

   B. $550,000

   C. $250,000

   Answer: C

   Total assets = Total liabilities + Contributed capital – Ending retained earnings

   Ending retained earnings = Total assets – Total liabilities – Contributed capital

   Ending retained earnings = 700,000 – 300,000 – 150,000

   Ending retained earnings = $250,000

9. Data is entered into the initial trial balance from:

A. Journal entries.

B. Draft financial statements.

C. General ledger.

Answer: C

The general ledger classifies general journal entries by accounts, which are then transferred to the initial trial balance.

10. Which of the following is *least likely* to be classified as an operating activity for a car manufacturer?

A. Payment of taxes on income

B. Purchase of equipment for manufacturing cars

C. Sale of cars to customers

Answer: B

The purchase of equipment for manufacturing cars is classified as an **investing** activity.

11. Which of the following is *most likely* regarding the classification of business activities for a bank?

	Operating Activity	Financing Activity
A	Borrowing funds to purchase new office premises	Payment of interest on borrowed funds
B	Purchase of office furniture	Dividend payments
C	Interest received on loans	Issuance of common stock

Answer: C

Interest paid/received by a bank is classified as an operating activity since it is in the business of taking deposits and making loans.

Borrowing funds to purchase new office premises is a financing activity, while purchasing office furniture is an investing activity.

Dividend payments and issuance of common stock are both financing activities.

12. Which of the following is the *most likely* classification for a clothing

manufacturer borrowing funds to purchase raw material?

A. Operating activity

B. Investing activity

C. Financing activity

Answer: C

Borrowing of funds is not part of the day-to-day activities for a clothing manufacturer. Hence, it is classified as a financing activity.

13. Which of the following is *least likely* an investing activity?

A. Interest received on a bond investment by a clothing manufacturer

B. Purchase of computer chips for a computer manufacturer

C. Purchase of cars for the company's directors

Answer: B

Purchase of computer chips by a computer manufacturer is an **operating** activity for the firm.

14. Heavy Metal Ltd. is a manufacturer of machinery which is used in the construction industry. It frequently borrows funds from ABS Bank. Which of the following is the *most likely* classification of this transaction for the two entities?

	Heavy Metal Pvt. Ltd.	**ABS Bank Pvt. Ltd.**
A	Operating activity	Financing activity
B	Financing activity	Operating activity
C	Investing activity	Operating activity

Answer: B

Borrowing of funds is a financing activity for Heavy Metal Ltd. and an operating activity for the bank.

15. An increase in a company's expenses is *least likely* to be accompanied by which of the following in order to keep the accounting equation in balance?

A. An increase in the company's assets only

B. An increase in the company's liabilities only

C. An increase in the company's revenues only

Answer: A

An increase in a company's expenses is likely to be accompanied by a **decrease** in the company's assets to keep the accounting equation in balance.

16. A decrease in a company's liabilities is *least likely* to be accompanied by which of the following to keep the accounting equation in balance?

A. An increase in contributed capital only

B. A decrease in revenue only

C. A decrease in assets only

Answer: B

A decrease in a company's liabilities is likely to be accompanied by an **increase** in revenue to keep the accounting equation in balance.

17. Which of the following is *most likely* an accurate representation of the accounting equation?

A. Assets + Liabilities = Contributed capital + Beginning retained earnings + Revenue – Expenses – Dividends

B. Assets – Contributed capital – Beginning retained earnings – Revenue + Expenses + Dividends declared = Liabilities

C. Assets – Liabilities = Contributed capital – Beginning retained earnings + Revenue – Expenses – Dividends declared

Answer: B

The accounting equation is:

Assets = Liabilities + Contributed capital + Beginning retained earnings + Revenue – Expenses – Dividends declared

18. Owners' equity is *least likely* equal to:

A. Contributed capital – Beginning retained earnings + Revenue – Expenses – Dividends declared

B. Assets – Liabilities

C. Contributed capital + Beginning retained earnings + Net income – Dividends declared

Answer: A

Owners' equity = Contributed capital + Beginning retained earnings + Revenue – Expenses – Dividends declared

19. The following information relates to Hawaiian Clothing Inc. for the year 2009:

Net Income = $95,000,000

Beginning retained earnings = $240,000,000

Dividends paid = $20,000,000

Dividends declared = $30,000,000

The company's ending retained earnings for 2009 are *closest to*:

A. $315,000,000

B. $115,000,000

C. $305,000,000

Answer: C

Ending retained earnings = Beginning retained earnings + Net income – Dividends declared

Ending retained earnings = 240,000,000 + 95,000,000 – 30,000,000 = $305,000,000

20. An analyst gathers the following information about Excellent Juice Inc. for 2009:

Assets = $870,000

Liabilities = $226,000

Contributed capital = $180,000

Beginning retained earnings = $332,000

Dividends declared = $94,000

The company's net income for 2009 is *closest to*:

A. $38,000

B. $132,000

C. $226,000

Answer: C

Net Income = Assets – Liabilities – Contributed capital – Beginning retained earnings + Dividends declared

Net Income = 870,000 – 226,000 – 180,000 – 332,000 + 94,000 = $226,000

21. JB Associates paid $30,000 wages in advance for 6 months. This transaction is *most likely* to result in:

A. An increase in net assets.

B. A decrease in net assets.

C. No change in net assets.

Answer: C

Wages paid in advance are classified as a prepaid expense asset. However, these payments result in an outflow of cash (also an asset). Therefore, there is no change in net assets for the company.

22. Jelena borrowed $45,000 from a bank to start her own business. This transaction is *least likely* to:

A. Increase assets by $45,000.

B. Increase owners' equity by $45,000.

C. Increase liabilities by $45,000.

Answer: B

Borrowing funds will increase cash (asset) and also increase the company's liabilities.

23. Creamy Cakes Inc. received $4,500 in advance for delivery of 100 cakes the following week. Which of the following statements is *least accurate* regarding the initial effects of this transaction on Creamy Cakes' financial statements for the current week?

A. Liabilities will increase by $4,500.

B. Assets will increase by $4,500.

C. There will be no effect on assets.

Answer: C

The receipt of $4,500 increases cash (an asset). However, since the company has yet to deliver the product it also records unearned revenue (a liability).

24. Rigs Inc. is a manufacturer of heavy machinery. It collects 50% of the invoiced amount in advance when customers place their orders and collects the remaining 50% upon delivery of the product. It only recognizes the sale on its financial statements once the product is delivered. The *most likely* effect of a customer placing an order worth $7,000 on its financial statements is:

A. No effect on liabilities.

B. An increase in assets of $7,000.

C. An increase in liabilities of $3,500.

Answer: C

The customer will make an advance payment of $3,500 which will increase the company's cash (an asset) as well as its unearned revenue (a liability).

25. During 2009, Trendy Clothing Inc. made cash sales worth $84,000 with a gross profit margin of 20%. The *most likely* effect on total assets as a result of this transaction is:

A. No change in assets.

B. An increase in total assets by $84,000.

C. An increase in total assets by $16,800.

Answer: C

The sales will increase company's cash (an asset) by $84,000. However, it will reduce the company's inventory (an asset) by $67,200 (84,000 × 80%). This will cause a net change in assets of $16,800 (84,000 – 67,200).

26. During 2009, Home Appliances Inc. made credit sales worth $96,000.

The cost of the products was $72,000. The *most likely* effect of this transaction on total assets is:

A. An increase in total assets of $96,000.

B. A decrease in total assets of $72,000.

C. An increase in total assets of $24,000.

Answer: C

Credit sales worth $96,000 will increase the company's accounts receivable (an asset). However, they will reduce the company's inventory by $72,000, which will cause a net increase in total assets of $24,000.

27. Huang Lee subscribed to research services provided by Capital Investments Ltd. and paid $1,200 in advance for a 6-month subscription. Which of the following is the *most appropriate* classification of this transaction by Lee and Capital Investments respectively?

	Huang Lee	Capital Investments Pvt. Ltd.
A	Accrued expense	Accrued revenue
B	Prepaid expense	Deferred revenue
C	Accrued revenue	Unearned expense

Answer: B

The advance payment for 6 months is a prepaid expense (an asset) for Huang Lee. However, cash received in advance is deferred or unearned revenue (a liability) for Capital Investments until it provides the goods or services.

28. Stacey opened a small flower shop and hired Peter for delivery of flowers to customers. After 1 month the business was still low on liquidity so Stacey promised Peter to pay his salary for the first 2 months at the end of the second month. At the end of the first month Stacey and Peter will *most likely* classify the month's wages as:

	Stacey	Peter
A	Accrued expense	Accrued revenue

B	Deferred expense	Deferred revenue
C	Unearned revenue	Accrued expense

Answer: A

Stacey has already received the services provided by Peter and is yet to pay him, so the first month's wages are an accrued expense for her. On the other hand, Peter has provided services and is yet to receive his payment so they are classified as accrued revenue for him.

29. During 2009, Antique Furniture Inc. made sales worth $270,000. At year end, the company had yet to receive cash amounting to $80,000 from customers. This outstanding amount will *most likely* be recorded on the financial statements as:

    A. Accrued revenue, liability.

    B. Deferred revenue, asset.

    C. Accrued revenue, asset.

    Answer: C

    When cash is still to be received for products that have already been delivered, it is classified as accrued revenue.

30. Deferred revenue is *most likely* classified as:

    A. A liability.

    B. An asset.

    C. Owners' equity.

    Answer: A

    Deferred (unearned) revenue is classified as a liability.

31. If a company has not paid cash for an expense that it has already incurred, it is *most likely* to classify it as a(n):

    A. Accrued expense, a liability.

    B. Deferred expense, an asset.

    C. Accrued revenue, a liability.

    Answer: A

If a company incurs an expense and is yet to pay for it, the expense is classified as an accrued expense (liability).

32. Which of the following statements is *most accurate*?

    A. A general ledger shows all business transactions by date.

    B. T-accounts are representations of journal accounts.

    C. Entries are recorded in the general journal as they occur.

    Answer: C

    A general ledger shows all business transactions by **account**.

    T-accounts are representations of **ledger** accounts.

33. Which of the following statements regarding a trial balance is *least accurate*?

    A. A trial balance lists account balances at a particular point in time.

    B. Entries are recorded in the trial balance from the general journal.

    C. A trial balance shows only the ending balances of various accounts.

    Answer: B

    Entries are recorded in the trial balance from the general **ledger**.

34. If a company reports a fictitious expense, which of the following is it *least likely* to do in order to cover up the fraud?

    A. Overstate its liabilities

    B. Overstate its assets

    C. Understate its assets

    Answer: B

    In order to balance the accounting equation, the company must either increase its liabilities or decrease its assets.

35. A company received cash for sale of goods, but it does not want to show the proceeds as revenue on its financial statements. Which of the following would *most likely* cover up its intended fraud?

    A. Increase its assets

    B. Decrease its liabilities

C. Create a fictitious liability

Answer: C

In order to balance the accounting equation, the company would either need to understate its assets or overstate its liabilities. Creating a fictitious liability will inflate liabilities.

Reading 24: Financial Reporting Standards

1. Accounting standard boards should *least likely*:

    A. Have clear and consistent processes to guide the organization and formation of standards.

    B. Have clearly defined responsibilities for all parties involved in the standard-setting process.

    C. Let the decision-setting process be compromised due to pressure from external forces.

2. Which of the following is *least likely* a desirable qualitative characteristic of financial statements?

    A. Faithful representation

    B. Relevance

    C. Conciseness

3. Which of the following statements regarding elements of the financial statements is *least likely*?

    The IFRS framework describes:

    A. Equity as being equal to capital contributed by the owner.

    B. Assets as the resources the entity controls from which it expects to derive future economic benefits.

    C. Liabilities as obligations that will result in an outflow of economic benefits in the future.

4. Which of the following is *most likely* a qualitative characteristic that enhances the value of relevant and faithfully represented financial information?

    A. Neutrality

    B. Completeness

    C. Timeliness

5. Accrual accounting requires that:

A. An entity should record revenue or an expense as soon as cash is received.

B. An entity will continue to exist in the foreseeable future.

C. An entity should record revenue or an expense when it is actually earned or incurred.

6. Which of the following is *least likely* a characteristic of an effective financial reporting framework?

   A. Completeness

   B. Transparency

   C. Consistency

7. Which of the following approaches is adopted by the IASB?

   A. Objectives-oriented

   B. Principles-based

   C. Rules-based

8. Which of the following elements of financial statements is *least likely* related to the measurement of performance?

   A. Income

   B. Expenses

   C. Assets

9. Which of the following statements regarding the IASB is *least accurate*?

   A. It is a private organization consisting of experienced accountants, auditors, users of financial statements, and academics.

   B. It has legal authority to enforce financial reporting requirements.

   C. It is advised by the Standards Advisory Council.

10. Which of the following is *least likely* a regulatory authority?

    A. Securities and Exchange Commission (SEC)

    B. International Organization of Securities Commission (IOSCO)

    C. European Securities Committee (ESC)

11. Which of the following is *least likely* a goal of the IASB?
    A. To develop country-specific accounting standards.
    B. To promote the use of global accounting standards.
    C. To take account of the special needs of small and medium-sized entities and emerging economies.
12. Which of the following is *least likely* an objective of the International Organization of Securities Commission (IOSCO)?
    A. To reduce unsystematic risk
    B. To protect the investors
    C. To ensure that markets are fair, efficient, and transparent
13. Form DEF-14A is *most likely* filed for which of the following purposes?
    A. To file Management Discussion & Analysis
    B. To provide information regarding proposals that require a shareholder vote
    C. To file unaudited financial statements
14. If a user requires information regarding material corporate events, she is *most likely* to refer to:
    A. Form 144.
    B. Form 6-K.
    C. Form 8-K.
15. Which of the following is not a barrier to moving toward one set of universally accepted financial reporting standards?
    A. Various standard-setting bodies have other pressing priorities.
    B. There is strong opposition from the emerging countries.
    C. There are differences of opinion between standard-setting bodies and regulators.
16. Which of the following statements regarding the qualitative characteristics of reporting financial statement elements under the IFRS framework is *least accurate*?

A. Financial statements may omit nonquantifiable information.

B. The framework requires the presentation of all the financial information irrespective of how long it takes to gather that information.

C. Information should be presented in a consistent manner between entities.

17. If a user wants to measure the financial position of a company, she is *least likely* to refer to:

    A. Equity.

    B. Liabilities.

    C. Gains.

18. Which of the following is the *most accurate* definition of assets?

    A. They are tangible resources controlled by the enterprise from which future economic benefits are expected to flow to the enterprise.

    B. They are resources controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.

    C. They are resources controlled by the enterprise from which it has earned economic benefits.

19. Which of the following is *least likely* a part of income?

    A. Inflow of capital from the owner

    B. Gains from the increase in the market value of securities held for trading

    C. Gains on sale of discontinued operations

20. Which of the following is *least likely* a condition for recognizing financial statement elements?

    A. The item is tangible.

    B. The cost of the item can be measured reliably.

    C. It is probable that any future economic benefits associated with the item will flow to or from the enterprise.

21. A company values its assets at the amount that would have to be paid to purchase it today. The company is *most likely* using which of the following measurement bases?

   A. Realizable value

   B. Fair value

   C. Current cost

22. Which of the following is the *most accurate* explanation of "realizable value" as a measurement base for liabilities?

   A. It is the present discounted value of the expected future net cash outflows that are required to settle the liability in the normal course of business.

   B. It is the undiscounted amount of cash expected to be paid to satisfy the liability in the normal course of business.

   C. It is the undiscounted amount of cash required to settle the obligation today.

23. Which of the following *most accurately* describes "realizable value" as a measurement base for assets?

   A. It is the amount of cash paid to purchase an asset, including costs of acquisition and installation.

   B. It is the amount for which the asset could be exchanged between knowledgeable, willing parties in an arm's length transaction, which may involve either market measures or present value measures.

   C. It is the amount of cash that can currently be obtained by selling the asset in an orderly disposal.

24. Which of the following is *least likely* a general requirement for the preparation of financial statements?

   A. Completeness

   B. Going concern

   C. Materiality

25. Which of the following is *most likely* a general requirement for the

preparation of financial statements?

A. Verifiability

B. Timeliness

C. Accrual basis

26. Which of the following is the *most accurate* description of the going concern assumption?

    A. The entity will continue to exist in the foreseeable future.

    B. Management has no realistic alternative but to cease trading.

    C. The entity will cease to exist in the foreseeable future.

27. Which of the following statements is *most accurate*?

    A. The IASB framework does not discuss the term “probable” in its recognition criteria.

    B. The IASB framework includes three more elements relating to financial performance, namely, gains, losses, and comprehensive income.

    C. The IASB framework defines an asset as “a resource controlled by the entity from which future economic benefits are expected to flow to the entity.”

Reading 24: Financial Reporting Standards

1. Accounting standard boards should *least likely*:

   A. Have clear and consistent processes to guide the organization and formation of standards.

   B. Have clearly defined responsibilities for all parties involved in the standard-setting process.

   C. Let the decision-setting process be compromised due to pressure from external forces.

   Answer: C

   Accounting standard boards should **not** let the decision-setting process be compromised due to pressure from external forces.

2. Which of the following is *least likely* a desirable qualitative characteristic of financial statements?

   A. Faithful representation

   B. Relevance

   C. Conciseness

   Answer: C

   Two fundamental qualitative characteristics of financial statements are relevance and faithful representation. Other qualitative characteristics that enhance the value of financial information are comparability, verifiability, timeliness, and understandability.

3. Which of the following statements regarding elements of the financial statements is *least likely*?

   The IFRS framework describes:

   A. Equity as being equal to capital contributed by the owner.

   B. Assets as the resources the entity controls from which it expects to derive future economic benefits.

   C. Liabilities as obligations that will result in an outflow of economic benefits in the future.

Answer: A

Equity includes owners' contributed capital as well as ending retained earnings. It can also be described as the owners' residual interest in the assets of a company after deducting all liabilities.

4. Which of the following is *most likely* a qualitative characteristic that enhances the value of relevant and faithfully represented financial information?

   A. Neutrality

   B. Completeness

   C. Timeliness

   Answer: C

   Faithful representation (a fundamental qualitative characteristic of financial reports) requires financial information to be neutral, complete, and free from errors. The four supplementary qualitative characteristics of financial statements are:

   - Comparability
   - Verifiability
   - Timeliness
   - Understandability

5. Accrual accounting requires that:

   A. An entity should record revenue or an expense as soon as cash is received.

   B. An entity will continue to exist in the foreseeable future.

   C. An entity should record revenue or an expense when it is actually earned or incurred.

   Answer: C

   Financial statements are prepared using two underlying assumptions. According to the **going concern** assumption, an entity is assumed to exist for the foreseeable future. According to the accrual accounting, an entity must record revenue or an expense when it is **actually earned or incurred**, not necessarily when cash is paid.

6. Which of the following is *least likely* a characteristic of an effective financial reporting framework?

   A. Completeness

   B. Transparency

   C. Consistency

   Answer: A

   The characteristics of a coherent financial reporting framework are transparency, comprehensiveness, and consistency. Completeness contributes to faithful representation of financial information.

7. Which of the following approaches is adopted by the IASB?

   A. Objectives-oriented

   B. Principles-based

   C. Rules-based

   Answer: B

   The IASB follows a principles-based approach, while the FASB is moving toward an objectives-oriented approach.

8. Which of the following elements of financial statements is *least likely* related to the measurement of performance?

   A. Income

   B. Expenses

   C. Assets

   Answer: C

   Income and expenses are related to the measurement of financial performance, while assets, liabilities, and equity are related to the measurement of **financial position**.

9. Which of the following statements regarding the IASB is *least accurate*?

A. It is a private organization consisting of experienced accountants, auditors, users of financial statements, and academics.

B. It has legal authority to enforce financial reporting requirements.

C. It is advised by the Standards Advisory Council.

Answer: B

The IASB is responsible for the **creation** of accounting standards; it is **not** a regulatory authority.

10. Which of the following is *least likely* a regulatory authority?

A. Securities and Exchange Commission (SEC)

B. International Organization of Securities Commission (IOSCO)

C. European Securities Committee (ESC)

Answer: B

IOSCO is not a regulatory authority; however, its members regulate a large portion of the world's financial capital markets.

11. Which of the following is *least likely* a goal of the IASB?

A. To develop country-specific accounting standards.

B. To promote the use of global accounting standards.

C. To take account of the special needs of small and medium-sized entities and emerging economies.

Answer: A

The goal of the IASB is to develop a single set of accounting standards and bring about convergence of national accounting standards and International Accounting Standards and International Financial Reporting Standards to high-quality solutions.

12. Which of the following is *least likely* an objective of the International Organization of Securities Commission (IOSCO)?

A. To reduce unsystematic risk

B. To protect the investors

C. To ensure that markets are fair, efficient, and transparent

Answer: A

One of the objectives of IOSCO is to reduce **systematic** risk.

13. Form DEF-14A is *most likely* filed for which of the following purposes?

    A. To file Management Discussion & Analysis

    B. To provide information regarding proposals that require a shareholder vote

    C. To file unaudited financial statements

    Answer: B

    Proposals that require a shareholder vote are included in the proxies which are filed with the SEC as form DEF-14A.

14. If a user requires information regarding material corporate events, she is *most likely* to refer to:

    A. Form 144.

    B. Form 6-K.

    C. Form 8-K.

    Answer: C

    Form 8-K is used to report material corporate events on a more current basis.

    Form 144 is filed with the SEC for disclosing proposed sale of restricted securities.

    Form 6-K is used by non-U.S. companies to submit certain financial information semi-annually.

15. Which of the following is not a barrier to moving toward one set of universally accepted financial reporting standards?

    A. Various standard-setting bodies have other pressing priorities.

    B. There is strong opposition from the emerging countries.

    C. There are differences of opinion between standard-setting bodies and regulators.

    Answer: B

Emerging countries do not form a strong opposition to moving toward one set of universally accepted financial reporting standards.

16. Which of the following statements regarding the qualitative characteristics of reporting financial statement elements under the IFRS framework is *least accurate*?

    A. Financial statements may omit nonquantifiable information.

    B. The framework requires the presentation of all the financial information irrespective of how long it takes to gather that information.

    C. Information should be presented in a consistent manner between entities.

    Answer: B

    The framework requires the presentation of information that is detailed enough to help the users in evaluating the risks and opportunities of a company. However, the criterion of materiality should be applied in choosing the level of detail. Outdated information may become irrelevant.

17. If a user wants to measure the financial position of a company, she is *least likely* to refer to:

    A. Equity.

    B. Liabilities.

    C. Gains.

    Answer: C

    Gains are included in income, which is a financial statement element that is used to measure the financial **performance** of the company.

18. Which of the following is the *most accurate* definition of assets?

    A. They are tangible resources controlled by the enterprise from which future economic benefits are expected to flow to the enterprise.

    B. They are resources controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.

C. They are resources controlled by the enterprise from which it has earned economic benefits.

Answer: B

Assets are defined as resources controlled by an enterprise as a result of past events, and from which future economic benefits are expected to flow to the enterprise.

19. Which of the following is *least likely* a part of income?

A. Inflow of capital from the owner

B. Gains from the increase in the market value of securities held for trading

C. Gains on sale of discontinued operations

Answer: A

Income is defined as increases in economic benefits in the form of inflows or enhancements of assets, or decreases of liabilities that result in an increase in equity (**other than increases resulting from contributions by owners**).

20. Which of the following is *least likely* a condition for recognizing financial statement elements?

A. The item is tangible.

B. The cost of the item can be measured reliably.

C. It is probable that any future economic benefits associated with the item will flow to or from the enterprise.

Answer: A

An item need not be tangible in order to be recognized as a financial statement element.

21. A company values its assets at the amount that would have to be paid to purchase it today. The company is *most likely* using which of the following measurement bases?

A. Realizable value

B. Fair value

C. Current cost

Answer: C

Current cost equals the amount of cash or cash equivalents that would have to be paid to buy the same or an equivalent asset today.

22. Which of the following is the *most accurate* explanation of “realizable value” as a measurement base for liabilities?

    A. It is the present discounted value of the expected future net cash outflows that are required to settle the liability in the normal course of business.

    B. It is the undiscounted amount of cash expected to be paid to satisfy the liability in the normal course of business.

    C. It is the undiscounted amount of cash required to settle the obligation today.

    Answer: B

    Statement A describes “present value” as a measurement base for liabilities.

    Statement C describes “current cost” as a measurement base for liabilities.

23. Which of the following *most accurately* describes “realizable value” as a measurement base for assets?

    A. It is the amount of cash paid to purchase an asset, including costs of acquisition and installation.

    B. It is the amount for which the asset could be exchanged between knowledgeable, willing parties in an arm’s length transaction, which may involve either market measures or present value measures.

    C. It is the amount of cash that can currently be obtained by selling the asset in an orderly disposal.

    Answer: C

    Statement A describes “historical cost” as a measurement base for assets.

Statement B describes “fair value” as a measurement base for assets.

24. Which of the following is *least likely* a general requirement for the preparation of financial statements?

    A. Completeness

    B. Going concern

    C. Materiality

    Answer: A

    Completeness contributes toward **faithful representation** of financial statements. General requirements for the preparation of financial statements include fair presentation, going concern, accrual basis, materiality and aggregation, no offsetting, frequency of reporting, comparative information, and consistency.

25. Which of the following is *most likely* a general requirement for the preparation of financial statements?

    A. Verifiability

    B. Timeliness

    C. Accrual basis

    Answer: C

    Verifiability and timeliness are qualitative characteristics that enhance the value of financial information.

26. Which of the following is the *most accurate* description of the going concern assumption?

    A. The entity will continue to exist in the foreseeable future.

    B. Management has no realistic alternative but to cease trading.

    C. The entity will cease to exist in the foreseeable future.

    Answer: A

    The going concern concept assumes that the entity will continue to exist for the foreseeable future.

27. Which of the following statements is *most accurate*?

A. The IASB framework does not discuss the term “probable” in its recognition criteria.

B. The IASB framework includes three more elements relating to financial performance, namely, gains, losses, and comprehensive income.

C. The IASB framework defines an asset as “a resource controlled by the entity from which future economic benefits are expected to flow to the entity.”

Answer: C

The **FASB** framework does not discuss the term “probable” in its recognition criteria.

The **FASB** framework includes gains, losses, and comprehensive income as financial statement elements.

Reading 25: Understanding the Income Statement

1. Which of the following is *least likely* another name for the income statement?

   A. Statement of financial position

   B. Statement of operations

   C. Statement of earnings

2. Which of the following is *least likely* a criterion to recognize revenue under U.S. GAAP?

   A. Price is determinable.

   B. There is evidence of an arrangement between the buyer and the seller.

   C. Cash is received.

3. If a firm delivers a good or a service for which cash will be received in the following month, it is *most likely* to record the transaction as an:

   A. Accrued revenue asset.

   B. Accrued expense liability.

   C. Accrued revenue liability.

4. According to IFRS, expenses include decreases in economic benefits from:

   A. Decreases in liabilities, other than those related to owners' equity.

   B. Decreases in owners' equity related to distributions made to them.

   C. Incurrence of liabilities, other than those related to owners' equity.

5. The percentage-of-completion method is *most likely* to be used when:

   A. The outcome of the project can be reliably measured.

   B. The costs associated with the project can be reliably measured.

C. The project's revenues and costs are certain to fluctuate.

6. Which of the following statements is *most accurate*?

   Under the completed-contract method:

   A. A firm should recognize revenue only to the extent of contract costs.

   B. Revenues, expenses, profits, or losses are recognized when the project is complete.

   C. Revenues, expenses, and profits are recognized when the project is complete.

7. A company incurs the following costs on a particular project:

Year	2006	2007	2008	Total
Costs incurred ($ '000)	500	700	300	1,500

   The total revenue from the project is expected to be $2,000,000. Under the percentage-of-completion method, the project's net income in 2008 is *closest to*:

   A. $600,000

   B. $100,000

   C. $300,000

8. ABC Corporation supplies heavy machinery to various companies. It sold one machine that cost $1,200,000 to XYZ Company for $1,500,000 and expects to receive the cash payments in installments. ABC cannot reasonably estimate the collectability of revenues.

Year	2006	2007	2008	Total
Expected cash to be collected ($ '000)	400	500	600	1,500

   ABC Corporation's profit for 2007 is *closest to*:

   A. $100,000

   B. $300,000

   C. $240,000

9. The cost-recovery method for accounting for installment sales is *most*

likely used:

A. When collectability of revenues cannot be reasonably estimated.

B. When collectability of revenues is highly uncertain.

C. When it is certain that the payments will be collected.

10. Which of the following statements about revenue recognition in barter transactions is *most accurate*?

    Under U.S. GAAP, firms recognize revenue associated with barter transactions:

    A. Based on the fair value of the exchanged asset.

    B. Based on the fair value of revenue that would be received in similar nonbarter transactions with unrelated parties.

    C. Based on fair value that is determined from past experience with similar transactions.

11. Under U.S. GAAP, a firm is *most likely* to use net revenue reporting in which of the following circumstances?

    A. When it does not bear the inventory and credit risk.

    B. When it is able to choose its supplier.

    C. When it has reasonable latitude to establish the price.

12. ABC Corporation sells electronic goods. It typically offers a 2-year warranty on its products. It calculates annual warranty expense as 2% of total sales. ABC Corporation should recognize a particular year's warranty expense on its income statement:

    A. When the expense is actually incurred, based on the accrual assumption.

    B. In the current period, based on the matching principle.

    C. When cash is actually paid for warranty-related expenses.

13. XYZ Company recently purchased a machine for $75,000. It expects to use the machine for 6 years, after which it will have a residual value of $5,000. How much depreciation should the company charge in the second year using double-declining balance depreciation?

A. $16,667

B. $15,556

C. $25,000

14. Which of the following statements is *least accurate*?

    A. A change in an accounting estimate is applied prospectively.

    B. A change in accounting principle is applied prospectively.

    C. A correction of prior period errors is made by restating all the financial statements presented in the financial report.

Use the following information to answer Questions 15 and 16:

Common stock at the beginning of the year: 50,000 shares

Shares issued on July 1: 4,000

Preferred stock: 12,000 shares, each of them convertible into 3 shares of common stock. Dividends amounting to $6,000 were declared on these shares.

The company reported net income of $200,000 and paid $10,000 as dividends to its common shareholders.

15. The company's basic EPS is *closest to*:

    A. 3.65

    B. 3.41

    C. 3.73

16. The company's diluted EPS is *closest to*:

    A. 2.27

    B. 2.20

    C. 2.22

17. A company's other comprehensive income *most likely* includes:

    A. Unrealized gains and losses from cash flow hedging derivatives.

    B. Dividends paid.

    C. Net income.

18. Which of the following is *least likely* an example of a potentially dilutive security?

    A. Preference shares

    B. Stock options

    C. Convertible bonds

19. Which of the following is *least likely* an example of grouping an expense by nature?

    A. Depreciation

    B. Cost of goods sold

    C. Interest expense

20. When an income statement explicitly shows gross profit as a subtotal, it *most likely* uses a:

    A. Multi-step format.

    B. Common-size format.

    C. Single-step format.

21. Which of the following is the *most appropriate* classification of profit on sale of discontinued operations by a manufacturing firm?

    A. Gain reported as a part of continuing operations

    B. Revenue considered a part of operating activities

    C. Gain reported after continuing operations

22. Under the IASB, the transfer of risks and rewards of ownership *most likely* occurs when:

    A. The buyer makes the payment.

    B. The goods are delivered to the buyer.

    C. The seller dispatches the order.

23. In which of the following circumstances is a firm *least likely* to recognize revenue according to the FASB?

    A. Risks and rewards of ownership of the goods have been transferred, but the buyer is unlikely to pay.

B. The goods have been delivered to the buyer.

C. There is evidence of an arrangement between the buyer and the seller.

24. If an analyst wants to review a firm's revenue recognition policies, she is *most likely* to refer to:

A. Management discussion and analysis.

B. Financial statement footnotes.

C. Additional supplementary schedules.

25. Under U.S. GAAP, which of the following revenue recognition methods is *most likely* to be used by a firm if the outcome of the contract cannot be measured reliably?

A. Percentage-of-completion method

B. Completed-contract method

C. Installment method

26. Under IFRS, if a firm can estimate the outcome of the project reliably, it is *most likely* to use which of the following revenue recognition methods?

A. Cost-recovery method

B. Recognize revenue to the extent of costs incurred

C. Percentage-of-completion method

27. Which of the following statements *most accurately* defines the completed-contract method for recognizing revenue?

A. Under this method, revenue is only recognized to the extent of costs incurred during the period.

B. Under this method, profits are recognized as cash is received.

C. Under this method, no revenues or costs are recognized on the income statement until the entire project is completed.

28. Which of the following statements regarding revenue recognition methods is *most accurate*?

A. The completed-contract method is more conservative as compared to the percentage-of-completion method in recognizing revenue.

B. The percentage-of-completion method relies less on management estimates and is, therefore, more objective as compared to the completed-contract method.

C. The completed-contract method results in better matching of revenue recognition with the accounting period in which it was earned.

Use the following information to answer Questions 29 to 32:

Mega Construction Pvt. Ltd. obtains a $75 million contract to construct a building. It estimates that it will take 4 years to complete the project. The estimated cost of the project is $60 million. Mega Construction incurs costs amounting to $20 million in Year 1, $15 million in Year 2, $13 million in Year 3, and $12 million in Year 4.

29. Assuming that the outcome of the project can be estimated reliably and that Mega follows IFRS, the profit that the company should recognize in Year 1 is *closest to*?

    A. $25 million

    B. $0

    C. $5 million

30. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows IFRS, the profit that the company should recognize in Year 2 is *closest to*?

    A. $3.75 million

    B. $0

    C. $18.75 million

31. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows U.S. GAAP, the revenue that the company should recognize in Year 3 is *closest to*?

    A. $0

    B. $16.25 million

    C. $3.25 million

32. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows U.S. GAAP, the profit that the company should recognize in Year 4 is *closest to*?

   A. $0

   B. $3 million

   C. $15 million

Use the following information to answer Questions 33 to 35:

MSK sold property worth $1,850,000 and allowed the buyer to make the payment in installments. MSK itself had bought the property 5 years ago for $1,140,000. The first two installments of $550,000 and $400,000 have been received in Years 1 and 2 respectively, while the rest of the payment is expected to be received in Year 3.

33. The amount of profit that MSK will recognize in Year 1, given that the collectability of revenues cannot be reasonably estimated is *closest to*:

   A. $211,081

   B. $0

   C. $710,000

34. The amount of profit that will be recognized in Year 2, given that the collectability of revenues is highly uncertain is *closest to*:

   A. $153,514

   B. $710,000

   C. $0

35. The amount of profit that will be recognized in Year 3, given that the cost-recovery method is used and that the third installment is received, is *closest to*:

   A. $345,405

   B. $710,000

   C. $0

36. Which of the following statements is *most accurate* regarding recognition of revenue from barter transactions under IFRS?

Under IFRS, revenue from barter transactions is based on the:

A. Fair value of revenues from similar nonbarter transactions with unrelated parties.

B. Fair value of revenues from similar barter transactions by other firms.

C. Fair value if the company has a history of making or receiving cash payments for such goods and services.

Use the following information to answer Questions 37 and 38:

Blue Rose Inc. is an event management company and is currently involved in organizing a rock concert. It hires Howard and Co. as its agent to sell tickets for the concert. Howard only pays for the tickets that it manages to sell to customers. It purchases a ticket for $1,500 and sells it for $1,650. Assume that Howard sells 20,000 tickets for the concert and that there are no other revenues and expenses involved.

37. The amount of revenue recognized by Blue Rose Inc. is *closest to*:

    A. $33 million

    B. $30 million

    C. $3 million

38. The amount of revenue recognized by Howard and Co. is *closest to*:

    A. $3 million

    B. $33 million

    C. $30 million

39. Which of the following inventory methods is not allowed under IFRS?

    A. First in, first out (FIFO)

    B. Last in, first out (LIFO)

    C. Weighted average

Use the following information to answer Questions 40 to 43:

In the year 2009 (its first year of operations), Indigo Computers made the following purchases:

	Units Purchased	Cost per Unit ($)	Total Cost ($)
First quarter	5,200	28	145,600
Second quarter	6,700	23	154,100
Third quarter	7,300	19	138,700
Fourth quarter	4,200	25	105,000
Total	**23,400**		**543,400**

It sold 15,100 units during the year at a price of $30 per unit.

40. Indigo's ending inventory under the first in, first out (FIFO) method is *closest to*?

    A. $216,900

    B. $249,000

    C. $182,900

41. Indigo's cost of goods sold under FIFO for 2009 is *closest to*?

    A. $360,500

    B. $326,500

    C. $350,656

42. Indigo's gross profit for 2009 if it uses FIFO is *closest to*:

    A. $126,500

    B. $102,344

    C. $92,500

43. Indigo's cost of goods sold under the weighted average cost method for 2009 is *closest to*:

    A. $350,565

    B. $360,500

    C. $350,656

Use the following information to answer Questions 44 and 45:

Supernova Inc. is a manufacturer of industrial chemicals. At the beginning of 2009, it purchased a machine for $875,000. The machine has an estimate useful life of 8 years and a residual value of $60,000.

44. Supernova's depreciation expense for 2009 under the straight line method is *closest to*:

    A. $101,875

    B. $109,375

    C. $81,500

45. Supernova's depreciation expense for 2010 under the double-declining balance method is *closest to*:

    A. $218,750

    B. $164,063

    C. $203,750

46. Which of the following statements is *most accurate* regarding depreciation expense in the year that a depreciable asset is acquired?

    A company using straight-line depreciation with a useful life of 5 years is more conservative than a company using:

    A. Double-declining balance depreciation with a shorter useful life.

    B. Straight-line depreciation with a longer useful life.

    C. Declining balance method with the same useful life.

47. The following information relates to Beta Inc. for the year ended 2008:

    Shares outstanding on January 1, 2008 = 2,000,000

    3-2 stock split on March 1, 2008

    Shares issued on July 31, 2008 = 200,000

    5% stock dividend on October 31, 2008

    Shares repurchased on December 1, 2008 = 100,000

    Shares outstanding on December 31, 2008 = 2,800,000

    Beta Inc. reported net income of $3.34 million for the year ended 2008. The company's EPS is *closest to*:

    A. $1.03

B. $1.19

C. $1.09

48. The following information relates to Pharma One Ltd. for the year ended 2009:

    Net income = $2,150,000

    Preferred dividends = $210,000

    Dividends paid to common shareholders = $170,000

    Weighted average number of common shares outstanding = $800,000

    Pharma One's basic EPS is *closest to*:

    A. $2.21

    B. $2.43

    C. $2.48

49. The following information relates to Alpha One Ltd. for the year ended 2009:

    Net income = $2,360,000

    10% preferred stock = $500,000

    Dividends paid to common shareholders = $44,000

    Weighted average number of shares outstanding = $500,000

    The company also has 500 convertible preferred shares outstanding, which pay a dividend of $75 per share every year. Each convertible preferred share can be converted into 50 common shares.

    Alpha One's basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	4.65	4.50
B	4.55	4.40
C	4.62	4.42

50. The following information relates to Global Manufacturers for the year ended 2009:

Net income = $2,440,000

12% preferred stock = $850,000

Dividends paid to common shareholders = $50,000

Weighted average number of common shares outstanding = 2,000,000

The company also has $100,000 par of 8% convertible bonds outstanding, which are convertible into 20,000 shares of common stock.

Given that Global Manufacturers pays taxes at the rate of 35%, its basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	1.22	1.21
B	1.17	1.16
C	1.14	1.14

51. The following information relates to MY Traders for the year ended 2009:

Net income = $3,540,000

10% preferred stock = $1,000,000

Dividends paid to common shareholders = $45,000

Weighted average number of common shares outstanding = 3,000,000

The company also has $200,000 par of 12% convertible bonds outstanding, which are convertible into 10,000 shares of common stock.

Given that MY Traders pays taxes at the rate of 35%, its basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	1.15	1.14
B	1.18	1.14

C	1.15	1.15

52. During 2009, Solar Corporations earned profits amounting to $4.5 million and paid preference dividends amounting to $100,000. The company had 3.5 million shares outstanding throughout the year with an average market price of $50. It also had 50,000 stock options outstanding which had an exercise price of $40. Given that the market price of the company's shares at year end was $60 and that the company pays taxes at the rate of 35%, its diluted EPS using the treasury stock method is *closest to*:

    A. $1.254

    B. $1.251

    C. $1.257

53. Which of the following is *least likely* to be classified as other comprehensive income under U.S. GAAP?

    A. Changes in the value of long-lived assets that are measured using the revaluation model

    B. Unrealized holding gains and losses on available-for-sale securities

    C. Minimum pension liability adjustments

Reading 25: Understanding the Income Statement

1. Which of the following is *least likely* another name for the income statement?

   A. Statement of financial position

   B. Statement of operations

   C. Statement of earnings

   Answer: A

   Statement of financial position refers to the **balance sheet**.

2. Which of the following is *least likely* a criterion to recognize revenue under U.S. GAAP?

   A. Price is determinable.

   B. There is evidence of an arrangement between the buyer and the seller.

   C. Cash is received.

   Answer: C

   In order to recognize revenue, the seller should be reasonably sure of collecting money. Receipt of cash is **not** a requirement for revenue recognition under U.S GAAP or IFRS.

3. If a firm delivers a good or a service for which cash will be received in the following month, it is *most likely* to record the transaction as an:

   A. Accrued revenue asset.

   B. Accrued expense liability.

   C. Accrued revenue liability.

   Answer: A

   Accrued revenue is recognized when a firm has already delivered a good or a service for which cash will be received in future. Accrued revenue is an asset for the firm.

4. According to IFRS, expenses include decreases in economic benefits from:

   A. Decreases in liabilities, other than those related to owners' equity.

   B. Decreases in owners' equity related to distributions made to them.

   C. Incurrence of liabilities, other than those related to owners' equity.

   Answer: C

   According to IFRS, expenses include decreases in economic benefits from an outflow or depletion of assets, or incurrence of liabilities that result in decreases in owners' equity, other than those relating to distributions to equity participants.

5. The percentage-of-completion method is *most likely* to be used when?

   A. The outcome of the project can be reliably measured.

   B. The costs associated with the project can be reliably measured.

   C. The project's revenues and costs are certain to fluctuate.

   Answer: A

   Under U.S. GAAP and IFRS, the percentage-of-completion method can only be used when the outcome of the project can be measured reliably.

6. Which of the following statements is *most accurate*?

   Under the completed-contract method:

   A. A firm should recognize revenue only to the extent of contract costs.

   B. Revenues, expenses, profits, or losses are recognized when the project is complete.

   C. Revenues, expenses, and profits are recognized when the project is complete.

   Answer: C

   Under the completed-contract method, revenues, expenses, and profits are recognized when the project is complete. However, expected losses must be recognized **immediately**.

7. A company incurs the following costs on a particular project:

Year	2006	2007	2008	Total
Costs incurred ($ ’000)	500	700	300	1,500

The total revenue from the project is expected to be $2,000,000. Under the percentage-of-completion method, the project’s net income in 2008 is *closest to*:

A. $600,000

B. $100,000

C. $300,000

Answer: B

Profit recognized in 2008 = (300,000/1,500,000) × (2,000,000 – 1,500,000) = $100,000

8. ABC Corporation supplies heavy machinery to various companies. It sold one machine that cost $1,200,000 to XYZ Company for $1,500,000 and expects to receive the cash payments in installments. ABC cannot reasonably estimate the collectability of revenues.

Year	2006	2007	2008	Total
Expected cash to be collected ($ ’000)	400	500	600	1,500

ABC Corporation’s profit for 2007 is *closest to*:

A. $100,000

B. $300,000

C. $240,000

Answer: A

The installment method is used when the collectability of revenues cannot be reasonably estimated. The percentage of total profit recognized in each period equals the proportion of total cash received in each period.

Profit = (500/1,500) × 300 = $100

9. The cost-recovery method for accounting for installment sales is *most likely* used:

   A. When collectability of revenues cannot be reasonably estimated.

   B. When collectability of revenues is highly uncertain.

   C. When it is certain that the payments will be collected.

   Answer: B

   The cost-recovery method is used when collectability of revenues is highly uncertain.

10. Which of the following statements about revenue recognition in barter transactions is *most accurate*?

    Under U.S. GAAP, firms recognize revenue associated with barter transactions:

    A. Based on the fair value of the exchanged asset.

    B. Based on the fair value of revenue that would be received in similar nonbarter transactions with unrelated parties.

    C. Based on fair value that is determined from past experience with similar transactions.

    Answer: C

    Under U.S. GAAP, firms recognize revenue from barter transactions based on their past experience with similar transactions.

    On the other hand, under IFRS, revenue is recognized based on the fair value of revenue from similar nonbarter transactions with unrelated parties.

11. Under U.S. GAAP, a firm is *most likely* to use net revenue reporting in which of the following circumstances?

    A. When it does not bear the inventory and credit risk.

    B. When it is able to choose its supplier.

    C. When it has reasonable latitude to establish the price.

    Answer: A

    Under U.S. GAAP, if a company does not bear inventory and credit risk associated with a sale, it should use net revenue reporting.

If a company can choose its suppliers and has reasonable latitude to establish price, it can use gross revenue reporting.

12. ABC Corporation sells electronic goods. It typically offers a 2-year warranty on its products. It calculates annual warranty expense as 2% of total sales. ABC Corporation should recognize a particular year's warranty expense on its income statement:

    A. When the expense is actually incurred, based on the accrual assumption.

    B. In the current period, based on the matching principle.

    C. When cash is actually paid for warranty-related expenses.

    Answer: B

    Expense recognition should be based on the matching principle, which requires that expenses incurred to generate revenue should be recognized in the same period as the related sales.

13. XYZ Company recently purchased a machine for \$75,000. It expects to use the machine for 6 years, after which it will have a residual value of \$5,000. How much depreciation should the company charge in the second year using double-declining balance depreciation?

    A. \$16,667

    B. \$15,556

    C. \$25,000

    Answer: A

    Depreciation expense (first year) = $2/6 \times (75{,}000) = \$25{,}000$

    Depreciation expense (second year) = $2/6 \times (75{,}000 - 25{,}000) = \$16{,}667$

14. Which of the following statements is *least accurate*?

    A. A change in an accounting estimate is applied prospectively.

    B. A change in accounting principle is applied prospectively.

    C. A correction of prior period errors is made by restating all the financial statements presented in the financial report.

Answer: B

A change in accounting principle is applied **retrospectively**.

Use the following information to answer Questions 15 and 16:

Common stock at the beginning of the year: 50,000 shares

Shares issued on July 1: 4,000

Preferred stock: 12,000 shares, each of them convertible into 3 shares of common stock. Dividends amounting to $6,000 were declared on these shares.

The company reported net income of $200,000 and paid $10,000 as dividends to its common shareholders.

15. The company's basic EPS is *closest to*:

    A. 3.65

    B. 3.41

    C. 3.73

    Answer: C

    Basic EPS = (Net income – Preferred dividends)/Weighted avg. no. of ordinary shares

    Basic EPS = (200,000 – 6,000) / (50,000 + 2,000) = $3.731

16. The company's diluted EPS is *closest to*:

    A. 2.27

    B. 2.20

    C. 2.22

    Answer: A

    In calculating diluted EPS, we will assume that the convertible preferred stock is converted into common stock. Therefore, number of new shares issued will be added in the denominator and preferred dividend will not be subtracted from the numerator (as it will not be paid).

Diluted EPS = 200,000 / (52,000 + 36,000) = $2.27

17. A company's other comprehensive income *most likely* includes:

    A. Unrealized gains and losses from cash flow hedging derivatives.

    B. Dividends paid.

    C. Net income.

    Answer: A

    Unrealized gains and losses from cash flow hedging derivatives are included in other comprehensive income. Net income is included in **comprehensive income**, but not in other comprehensive income.

18. Which of the following is *least likely* an example of a potentially dilutive security?

    A. Preference shares

    B. Stock options

    C. Convertible bonds

    Answer: A

    Preference shares are not potentially dilutive securities as they **cannot** be converted into ordinary shares of the company. Options, warrants, convertible preference shares, and convertible bonds may be converted into ordinary shares and are, therefore, potentially dilutive.

19. Which of the following is *least likely* an example of grouping an expense by nature?

    A. Depreciation

    B. Cost of goods sold

    C. Interest expense

    Answer: B

    Cost of goods sold is an example of grouping an expense by **function** and may include salaries, material costs, depreciation, and other direct sales-related expenses.

20. When an income statement explicitly shows gross profit as a subtotal, it *most likely* uses a:

A. Multi-step format.

B. Common-size format.

C. Single-step format.

Answer: A

When the income statement shows a gross profit subtotal, it is said to use a multi-step format.

21. Which of the following is the *most appropriate* classification of profit on sale of discontinued operations by a manufacturing firm?

A. Gain reported as a part of continuing operations

B. Revenue considered a part of operating activities

C. Gain reported after continuing operations

Answer: C

Gain on sale of discontinued operations is reported after income from continuing operations.

22. Under the IASB, the transfer of risks and rewards of ownership *most likely* occurs when:

A. The buyer makes the payment.

B. The goods are delivered to the buyer.

C. The seller dispatches the order.

Answer: B

The IASB states that the transfer of risks and rewards typically occurs when goods are delivered to the buyer or when the legal title to the goods is transferred.

23. In which of the following circumstances is a firm *least likely* to recognize revenue according to the FASB?

A. Risks and rewards of ownership of the goods have been transferred, but the buyer is unlikely to pay.

B. The goods have been delivered to the buyer.

C. There is evidence of an arrangement between the buyer and the seller.

Answer: A

According to the FASB, one of the conditions for recognizing revenue is that the seller is reasonably sure of collecting money.

24. If an analyst wants to review a firm's revenue recognition policies, she is *most likely* to refer to:

    A. Management discussion and analysis.

    B. Financial statement footnotes.

    C. Additional supplementary schedules.

    Answer: B

    Companies are required to disclose their revenue recognition policies in the financial statement footnotes.

25. Under U.S. GAAP, which of the following revenue recognition methods is *most likely* to be used by a firm if the outcome of the contract cannot be measured reliably?

    A. Percentage-of-completion method

    B. Completed-contract method

    C. Instalment method

    Answer: B

    According to U.S. GAAP, if the outcome of the project cannot be measured reliably, the completed-contract method is used to recognize revenue.

26. Under IFRS, if a firm can estimate the outcome of the project reliably, it is *most likely* to use which of the following revenue recognition methods?

    A. Cost-recovery method

    B. Recognize revenue to the extent of costs incurred

    C. Percentage-of-completion method

    Answer: C

According to IFRS, if the outcome of the project can be measured reliably, the percentage-of-completion method is used to recognize revenue.

27. Which of the following statements *most accurately* defines the completed-contract method for recognizing revenue?

    A. Under this method, revenue is only recognized to the extent of costs incurred during the period.

    B. Under this method, profits are recognized as cash is received.

    C. Under this method, no revenues or costs are recognized on the income statement until the entire project is completed.

    Answer: C

    Statement A describes the method used under IFRS if the outcome of the project cannot be estimated reliably.

    Statement B describes the installment method.

28. Which of the following statements regarding revenue recognition methods is *most accurate*?

    A. The completed-contract method is more conservative as compared to the percentage-of-completion method in recognizing revenue.

    B. The percentage-of-completion method relies less on management estimates and is, therefore, more objective as compared to the completed-contract method.

    C. The completed-contract method results in better matching of revenue recognition with the accounting period in which it was earned.

    Answer: A

    The percentage-of-completion method results in revenue recognition sooner than the completed-contract method and thus may be considered a less conservative approach.

    The percentage-of-completion method relies more on management estimates and is, therefore, more subjective as compared to the completed-contract method.

The percentage-of-completion method results in better matching of revenue recognition with the accounting period in which it was earned.

Use the following information to answer Questions 29 to 32:

Mega Construction Pvt. Ltd. obtains a $75 million contract to construct a building. It estimates that it will take 4 years to complete the project. The estimated cost of the project is $60 million. Mega Construction incurs costs amounting to $20 million in Year 1, $15 million in Year 2, $13 million in Year 3, and $12 million in Year 4.

29. Assuming that the outcome of the project can be estimated reliably and that Mega follows IFRS, the profit that the company should recognize in Year 1 is *closest to*?

    A. $25 million

    B. $0

    C. $5 million

    Answer: C

    Percentage of total costs incurred in Year 1 = (20/60) × 100 = 33.33%

    Revenue recognized in Year 1 = 75 × 33.33% = $25 million

    Therefore, profit in Year 1 = 25 – 20 = $5 million

30. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows IFRS, the profit that the company should recognize in Year 2 is *closest to*?

    A. $3.75 million

    B. $0

    C. $18.75 million

    Answer: B

    Under IFRS, if the outcome of the project cannot be estimated reliably, revenue is recognized on the income statement to the extent of costs incurred during the period. No profits are recognized until completion of the project.

31. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows U.S. GAAP, the revenue that the company

should recognize in Year 3 is *closest to*?

A. $0

B. $16.25 million

C. $3.25 million

Answer: A

Under U.S. GAAP, if the outcome of the project cannot be estimated reliably, the completed-contract method is used. Under this method, no revenues or costs are recognized on the income statement until the entire project is completed.

32. Assuming that the outcome of the project cannot be estimated reliably, and that Mega follows U.S. GAAP, the profit that the company should recognize in Year 4 is *closest to*?

A. $0

B. $3 million

C. $15 million

Answer: C

Under U.S. GAAP, if the outcome of the project cannot be estimated reliably, the entire amount of revenues, costs, and net income will be recognized in Year 4 on the income statement.

Use the following information to answer Questions 33 to 35:

MSK sold property worth $1,850,000 and allowed the buyer to make the payment in installments. MSK itself had bought the property 5 years ago for $1,140,000. The first two installments of $550,000 and $400,000 have been received in Years 1 and 2 respectively, while the rest of the payment is expected to be received in Year 3.

33. The amount of profit that MSK will recognize in Year 1, given that the collectability of revenues cannot be reasonably estimated is *closest to*:

A. $211,081

B. $0

C. $710,000

Answer: A

If the collectability of revenues cannot be reasonably estimated, the installment method is used.

Profit for the period = (Cash collected in the period / Selling price) × Total profit

Therefore, profit in Year 1 = (550,000 / 1,850,000) × 710,000 = $211,081.08

34. The amount of profit that will be recognized in Year 2, given that the collectability of revenues is highly uncertain is *closest to*:

A. $153,514

B. $710,000

C. $0

Answer: C

If the collectability of revenues is highly uncertain, the cost-recovery method is used and profits are only recognized once the total cash collections exceed total costs.

Since total cash received by the company ($950,000) does not exceed the cost of the property ($1,140,000), MSK will not recognize any profits in Year 2.

35. The amount of profit that will be recognized in Year 3, given that the cost-recovery method is used and that the third installment is received, is *closest to*:

A. $345,405

B. $710,000

C. $0

Answer: B

Under the cost-recovery method, profits are only recognized once the total cash collections exceed total costs. If the third instalment of $900,000 is received in Year 3, the company will recognize a profit of $710,000.

36. Which of the following statements is *most accurate* regarding

recognition of revenue from barter transactions under IFRS?

Under IFRS, revenue from barter transactions is based on the:

A. Fair value of revenues from similar nonbarter transactions with unrelated parties.

B. Fair value of revenues from similar barter transactions by other firms.

C. Fair value if the company has a history of making or receiving cash payments for such goods and services.

Answer: A

Under IFRS, revenue from barter transactions can be reported on the income statement based on the fair value of revenues from similar nonbarter transactions with unrelated parties.

Statement C describes the treatment of revenue recognition from barter transactions under U.S. GAAP.

Use the following information to answer Questions 37 and 38:

Blue Rose Inc. is an event management company and is currently involved in organizing a rock concert. It hires Howard and Co. as its agent to sell tickets for the concert. Howard only pays for the tickets that it manages to sell to customers. It purchases a ticket for $1,500 and sells it for $1,650. Assume that Howard sells 20,000 tickets for the concert and that there are no other revenues and expenses involved.

37. The amount of revenue recognized by Blue Rose Inc. is *closest to*:

A. $33 million

B. $30 million

C. $3 million

Answer: B

Blue Rose Inc. recognizes revenue on the basis of gross reporting. Hence, it will recognize revenue equal to: $1,500 \times 20,000 = \$30$ million

38. The amount of revenue recognized by Howard and Co. is *closest to*:

A. $3 million

B. $33 million

C. $30 million

Answer: A

Howard and Co. should report revenue on a net basis because:

- It only pays for tickets that it is able to sell to customers. Therefore, it does not bear any inventory risk.
- Howard is not the primary obligor under the contract.

Therefore, Howard will recognize revenue equal to (1,650 – 1,500) × 20,000 = $3 million.

39. Which of the following inventory methods is not allowed under IFRS?

A. First in, first out (FIFO)

B. Last in, first out (LIFO)

C. Weighted average

Answer: B

IFRS does not permit the last in, first out (LIFO) method.

Use the following information to answer Questions 40 to 43:

In the year 2009 (its first year of operations), Indigo Computers made the following purchases:

	Units Purchased	**Cost per Unit ($)**	**Total Cost ($)**
First quarter	5,200	28	145,600
Second quarter	6,700	23	154,100
Third quarter	7,300	19	138,700
Fourth quarter	4,200	25	105,000
Total	**23,400**		**543,400**

It sold 15,100 units during the year at a price of $30 per unit.

40. Indigo's ending inventory under the first in, first out (FIFO) method is *closest to*?

A. $216,900

B. $249,000

C. $182,900

Answer: C

Number of units in ending inventory = 23,400 – 15,100 = 8,300 units

Ending inventory consists of:

4,200 units @ 25 = $105,000

4,100 units @ 19 = $77,900

Therefore, ending inventory = 105,000 + 77,900 = $182,900

41. Indigo's cost of goods sold under FIFO for 2009 is *closest to*?

A. $360,500

B. $326,500

C. $350,656

Answer: A

Number of units sold during the year = 15,100

Sold units consist of:

5,200 units @ 28 = $145,600

6,700 units @ 23 = $154,100

3,200 units @ 19 = $60,800

Therefore, cost of goods sold = 145,600 + 154,100 + 60,800 = $360,500

42. Indigo's gross profit for 2009 if it uses FIFO is *closest to*:

A. $126,500

B. $102,344

C. $92,500

Answer: C

Total revenues = 15,100 × 30 = $453,000

Gross profit = 453,000 – 360,500 = $92,500

43. Indigo's cost of goods sold under the weighted average cost method for 2009 is *closest to*:

A. $350,565

B. $360,500

C. $350,656

Answer: C

Cost of goods sold = (543,400 / 23,400) × 15,100 = $350,655.56

Use the following information to answer Questions 44 and 45:

Supernova Inc. is a manufacturer of industrial chemicals. At the beginning of 2009, it purchased a machine for $875,000. The machine has an estimate useful life of 8 years and a residual value of $60,000.

44. Supernova's depreciation expense for 2009 under the straight line method is *closest to*:

A. $101,875

B. $109,375

C. $81,500

Answer: A

Depreciation expense = (Cost – Residual Value) / Useful life

Depreciation expense = (875,000 – 60,000) / 8 = $101,875

45. Supernova's depreciation expense for 2010 under the double-declining balance method is *closest to*:

A. $218,750

B. $164,063

C. $203,750

Answer: B

DDB Depreciation = (2 / Useful life) × (Cost – Accumulated Depreciation)

Depreciation expense for 2009 = (2 / 8) × 875,000 = $218,750

Depreciation expense for 2010 = (2 / 8) × (875,000 – 218,750) =

$164,062.5

46. Which of the following statements is *most accurate* regarding depreciation expense in the year that a depreciable asset is acquired?

    A company using straight-line depreciation with a useful life of 5 years is more conservative than a company using:

    A. Double-declining balance depreciation with a shorter useful life.

    B. Straight-line depreciation with a longer useful life.

    C. Declining balance method with the same useful life.

    Answer: B

    Straight-line depreciation with a shorter useful life will result in a higher amount of depreciation expense in the first year and hence lower amount of net income as compared to straight-line depreciation with a long useful life. Therefore, it is more conservative.

    Straight-line depreciation is less conservative than the other two approaches as it results in a lower amount of depreciation expense in the first year and therefore, higher net income.

47. The following information relates to Beta Inc. for the year ended 2008:

    Shares outstanding on January 1, 2008 = 2,000,000

    3-2 stock split on March 1, 2008

    Shares issued on July 31, 2008 = 200,000

    5% stock dividend on October 31, 2008

    Shares repurchased on December 1, 2008 = 100,000

    Shares outstanding on December 31, 2008 = 2,800,000

    Beta Inc. reported net income of $3.34 million for the year ended 2008. The company's EPS is *closest to*:

    A. $1.03

    B. $1.19

    C. $1.09

    Answer: A

Shares outstanding on January 1	2,000,000
3-for-2 stock split	1,000,000
	3,000,000
5% stock dividend	150,000
Shares outstanding since January 1 (for 12 months)	3,150,000
Shares issued on July 31	200,000
5% stock dividend	10,000
Shares outstanding since July 31 (for 5 months)	210,000
Shares repurchased on December 1 (not outstanding for a month)	100,000

Weighted average number of ordinary shares outstanding:

$= (3{,}150{,}000 \times 12/12) + (210{,}000 \times 5/12) - (100{,}000 \times 1/12)$

$= 3{,}150{,}000 + 87{,}500 - 8{,}333.33 = 3{,}229{,}166.67$

Basic EPS = 3,340,000 / 3,229,166.67 = \$1.034

48. The following information relates to Pharma One Ltd. for the year ended 2009:

Net income = \$2,150,000

Preferred dividends = \$210,000

Dividends paid to common shareholders = \$170,000

Weighted average number of common shares outstanding = \$800,000

Pharma One's basic EPS is *closest to*:

A. \$2.21

B. \$2.43

C. \$2.48

Answer: B

Basic EPS = (Net income – Preferred dividends) / Weighted average number of shares outstanding

Basic EPS = (2,150,000 – 210,000) / 800,000 = $2.425

49. The following information relates to Alpha One Ltd. for the year ended 2009:

    Net income = $2,360,000

    10% preferred stock = $500,000

    Dividends paid to common shareholders = $44,000

    Weighted average number of shares outstanding = $500,000

    The company also has 500 convertible preferred shares outstanding, which pay a dividend of $75 per share every year. Each convertible preferred share can be converted into 50 common shares.

    Alpha One's basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	4.65	4.50
B	4.55	4.40
C	4.62	4.42

Answer: B

Preferred dividend = 500,000 × 0.1 = $50,000

Dividend paid on convertible preferred stock = 500 × 75 = $37,500

Basic EPS = (2,360,000 – 50,000 – 37,500) / 500,000 = $4.545

In calculating diluted EPS, it is assumed that convertible preferred shares are converted into common shares. Hence, no dividend is paid on them and the number of converted shares is added to the denominator.

Number of converted shares = 500 × 50 = 25,000

Diluted EPS = (2,360,000 – 50,000) / (500,000 + 25,000) = $4.4

50. The following information relates to Global Manufacturers for the year ended 2009:

    Net income = $2,440,000

12% preferred stock = $850,000

Dividends paid to common shareholders = $50,000

Weighted average number of common shares outstanding = 2,000,000

The company also has $100,000 par of 8% convertible bonds outstanding, which are convertible into 20,000 shares of common stock.

Given that Global Manufacturers pays taxes at the rate of 35%, its basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	1.22	1.21
B	1.17	1.16
C	1.14	1.14

Answer: B

Preferred dividend = 850,000 × 0.12 = $102,000

Basic EPS = (2,440,000 – 102,000) / 2,000,000 = $1.169

To determine diluted EPS, we will add the after-tax interest on convertible debt in the numerator and the number of converted shares in the denominator.

After-tax interest on convertible debt = 8,000 × (1 – 0.35) = $5,200

Diluted EPS = (2,440,000 – 102,000 + 5,200) / (2,000,000 + 20,000) = 1.16

51. The following information relates to MY Traders for the year ended 2009:

Net income = $3,540,000

10% preferred stock = $1,000,000

Dividends paid to common shareholders = $45,000

Weighted average number of common shares outstanding = 3,000,000

The company also has $200,000 par of 12% convertible bonds outstanding, which are convertible into 10,000 shares of common stock.

Given that MY Traders pays taxes at the rate of 35%, its basic and diluted earnings per share are *closest to*:

	Basic EPS ($)	Diluted EPS ($)
A	1.15	1.14
B	1.18	1.14
C	1.15	1.15

Answer: C

Preferred dividend = 1,000,000 × 0.1 = $100,000

Basic EPS = (3,540,000 – 100,000) / 3,000,000 = $1.147

To determine diluted EPS, we will add the after-tax interest on convertible debt in the numerator and the number of converted shares in the denominator.

After-tax interest on convertible debt = 24,000 × (1 – 0.35) = $15,600

Diluted EPS = (3,540,000 – 100,000 + 15,600) / (3,000,000 + 10,000) = $1.148

Since the convertible debt is anti-dilutive, it should be ignored in the calculation of dilutive EPS. Hence, diluted EPS equals basic EPS.

52. During 2009, Solar Corporations earned profits amounting to $4.5 million and paid preference dividends amounting to $100,000. The company had 3.5 million shares outstanding throughout the year with an average market price of $50. It also had 50,000 stock options outstanding which had an exercise price of $40. Given that the market price of the company's shares at year end was $60 and that the company pays taxes at the rate of 35%, its diluted EPS using the treasury stock method is *closest to*:

    A. $1.254

    B. $1.251

    C. $1.257

Answer: A

Since the average market price exceeds the exercise price of the option, they should be assumed to have been exercised.

Basic EPS = (4,500,000 – 100,000) / 3,500,000 = $1.257

Cash proceeds from exercise of options = 50,000 × 40 = $2,000,000

Number of shares that can be purchased at average market price with these funds

= 2,000,000 / 50 = 40,000

Net increase in common shares outstanding from the exercise of options

= 50,000 – 40,000 = 10,000

Diluted EPS = (4,500,000 – 100,000) / (3,500,000 + 10,000) = $1.254

53. Which of the following is *least likely* to be classified as other comprehensive income under U.S. GAAP?

A. Changes in the value of long-lived assets that are measured using the revaluation model

B. Unrealized holding gains and losses on available-for-sale securities

C. Minimum pension liability adjustments

Answer: A

The revaluation model is **not** allowed under U.S. GAAP; it uses the cost model.

Reading 26: Understanding the Balance Sheet

1. Which of the following balance sheet presentation formats reports assets on the left-hand side, and liabilities and equity on the right-hand side?

   A. Report format

   B. Classified balance sheet

   C. Account format

2. If a company receives cash before it recognizes the associated revenue it results in a(n):

   A. Unearned revenue liability.

   B. Accounts receivable asset.

   C. Prepaid expense asset.

3. If a company pays cash before it recognizes the associated expense it results in a(n):

   A. Unearned revenue liability.

   B. Accounts receivable asset.

   C. Prepaid expense asset.

4. An accrued expense liability is *most likely* recognized when:

   A. An expense is recognized before cash payment.

   B. Cash is paid prior to expense recognition.

   C. Revenue is recognized prior to the receipt of cash.

5. Noncontrolling interests are typically presented under which balance sheet element?

   A. Assets

   B. Liabilities

C. Equity

6. Provisions are typically presented under which balance sheet element?

   A. Assets

   B. Liabilities

   C. Equity

7. Which of the following is *least likely* an example of the measurement bases used to value items listed on the balance sheet?

   A. Present value

   B. Current cost

   C. Economic cost

8. Which of the following is *least likely* included in the statements of changes in shareholders' equity?

   A. Accumulated other comprehensive income

   B. Treasury stock

   C. Interest received

9. Mike sold goods worth $4,500, but is yet to receive cash for them. This will *most likely* lead to an increase in:

   A. Accrued revenue.

   B. Deferred expense.

   C. Deferred revenue.

10. Which of the following is *least likely* to be reported as a liability on the balance sheet?

    A. Deferred revenue

    B. Prepaid expense

    C. Accrued expense

11. Assets should *most likely* be recognized on the financial statements if:

    A. The item's useful life can be measured reliably.

    B. The item has physical substance.

C. The item has a cost or value that can be measured reliably.

12. Which of the following will *most likely* lead to a decrease in equity?

    A. Dividends paid

    B. Profits

    C. Owners' contribution

13. Which of the following is *least likely* to be included in equity?

    A. Retained earnings

    B. Bank borrowings

    C. Noncontrolling interest

14. Which of the following is *least likely* a format for the balance sheet?

    A. Report format

    B. Multi-step format

    C. Account format

15. When various classes of assets and liabilities are grouped together in a balance sheet, it is referred to as a:

    A. Classified balance sheet

    B. Pro-forma balance sheet

    C. Common-size balance sheet

16. Working capital is the excess of a company's:

    A. Assets over its liabilities.

    B. Noncurrent liabilities over its noncurrent assets.

    C. Current assets over its current liabilities.

17. Which of the following is an analyst *most likely* to examine in order to learn more about a firm's operating activities?

    A. Dividends declared

    B. Accounts receivable

    C. Goodwill

18. Which of the following is *least likely* a current liability?

    A. Trade payables expected to be settled within 18 months after the balance sheet date.

    B. Financial liabilities expected to be settled within 1 year after the balance sheet date, whose original term was 3 years.

    C. A liability that the entity has an unconditional right to defer settlement of for 2 years after the balance sheet date.

19. Bizcom International uses historical cost as a measurement base for its assets, while Telecard Inc. uses fair value. Given that over the past few years, prices of noncurrent assets have significantly increased, Bizcom is *most likely* to report:

    A. Higher assets than Telecard.

    B. Lower assets than Telecard.

    C. The same amount of assets as Telecard.

20. Three years ago, a company borrowed $20,000 to finance the purchase of a machine that cost $60,000. Given that the company uses historical cost to measure its assets and has charged accumulated depreciation of $10,000 over the 3 years, which of the following statements is *most likely*?

    The company will report:

    A. A gross asset of $30,000.

    B. A liability of $20,000.

    C. An asset of $60,000.

21. Which of the following is *least likely* included in inventory cost?

    A. Normal wastage

    B. Costs of conversion

    C. Costs incurred to store the final goods

22. A company purchases inventory and incurs the following costs:

    Direct material = $14,000

    Direct labor = $9,000

Abnormal overheads = $8,000

Administrative overheads = $10,000

Normal wastage of materials = $3,000

Storage cost of raw material = $12,000

Inventory reported on the company's balance sheet is *closest to*:

A. $38,000

B. $36,000

C. $26,000

23. Which of the following statements regarding inventory valuation is *most accurate*?

    A. Under IFRS, inventory is reported at the lower of fair value or net realizable value.

    B. Standard cost should take into account normal levels of material, labor, and excess capacity.

    C. The retail method reduces selling price by the gross profit margin to determine the cost of inventory.

24. Which of the following is *most likely* classified as an identifiable intangible asset?

    A. Trademarks

    B. Land and buildings

    C. Goodwill

25. Goodwill based on a company's performance and its future prospects is *most likely* known as:

    A. Accounting goodwill.

    B. Economic goodwill.

    C. Potential goodwill.

26. Jacob wants to calculate and compare the financial ratios of two companies, Alpha Inc. and Beta Inc. He observes the following:

    - Alpha Inc. has acquired several subsidiaries and has recognized the associated goodwill amounting to $40,000. Further, the company has recognized impairment of goodwill amounting to $5,000.

- Beta Inc. has recognized internally generated goodwill amounting to $32,000.

Which of the following statements is *least accurate* regarding adjustments to be made by Jacob to the two companies' financial statements in order to make their ratios comparable?

A. Both of the companies' goodwill should be excluded from the balance sheet.

B. Only Beta Inc.'s goodwill should be excluded from the balance sheet, as it has been generated internally.

C. The impairment expense of $5,000 should be added back to Alpha Inc.'s income statement.

27. Held-to-maturity investments are *most likely* measured at:

A. Amortized cost.

B. Historical cost.

C. Fair value.

28. Which of the following financial assets/liabilities is *least likely* to be measured at fair value?

A. Available-for-sale financial assets

B. Financial liabilities held for trading

C. Loans and receivables

29. Which of the following financial assets/liabilities is *most likely* to be measured at amortized cost?

A. Bonds payable

B. Derivatives

C. Nonderivative instruments with face value exposures hedged by derivatives

30. Which of the following statements regarding available-for-sale securities is *least accurate*?

A. They are neither expected to be traded in the near term, nor held till maturity.

B. They are reported at fair market value on the balance sheet.

C. Gains and losses associated with these securities are reported on the income statement.

31. Which of the following statements regarding held-to-maturity securities is *most accurate*?

    A. Unrealized gains and losses from changes in market value are ignored and not recognized on the financial statements.

    B. They are purchased with the intent of holding them for at least 10 years.

    C. Realized gains and losses are included in other comprehensive income as part of shareholders' equity.

32. Shares that are currently owned by common shareholders are *most likely* referred to as:

    A. Outstanding shares.

    B. Issued shares.

    C. Authorized shares.

33. Cromwell Associates has 15 million authorized shares, 8 million issued shares, and 6.5 million outstanding shares. Which of the following statements regarding Cromwell Associates is *most accurate*?

    A. Treasury stock amounts to 1.5 million shares.

    B. Holders of 8 million shares have voting rights.

    C. Holders of 8 million shares are entitled to receive dividends.

34. Which of the following statements regarding vertical common-size balance sheet is *least accurate*?

    A. It allows an analyst to perform cross-sectional analysis across firms within the same industry.

    B. It allows an analyst to perform time-series analysis.

    C. It expresses each balance sheet item as a percentage of noncurrent assets.

35. In order to evaluate a company's ability to settle its short-term obligations, an analyst is *most likely* to calculate:

    A. Profitability ratios.

    B. Liquidity ratios.

    C. Solvency ratios.

36. In order to evaluate a company's ability to meet its long-term obligations, an analyst will *most likely* examine its:

    A. Total debt ratio.

    B. Net operating cycle.

    C. Quick ratio.

Use the following information relating to JB Associates to answer Questions 37 to 40:

- Cash = $22,250
- Marketable securities = $13,480
- Receivables = $4,330
- Inventory = $4,240
- Noncurrent assets = $79,700
- Current liabilities = $31,450
- Long-term liabilities = $33,340
- Equity = $59,210

37. The company's current ratio is *closest to*:

    A. 1.28

    B. 0.98

    C. 1.41

38. The company's quick ratio is *closest to*:

    A. 0.98

    B. 0.85

C. 1.27

39. The company's long-term debt-to-equity ratio is *closest to*:

A. 1.09

B. 0.56

C. 0.53

40. The company's financial leverage ratio is *closest to*:

A. 2.09

B. 1.35

C. 0.75

Reading 26: Understanding the Balance Sheet

1. Which of the following balance sheet presentation formats reports assets on the left-hand side, and liabilities and equity on the right-hand side?

   A. Report format

   B. Classified balance sheet

   C. Account format

   Answer: C

   The account format presents assets on the left, and liabilities and equity on the right-hand side of the balance sheet.

2. If a company receives cash before it recognizes the associated revenue it results in a(n):

   A. Unearned revenue liability.

   B. Accounts receivable asset.

   C. Prepaid expense asset.

   Answer: A

   If a company receives cash before it recognizes the associated revenue it results in an unearned revenue liability.

3. If a company pays cash before it recognizes the associated expense it results in a(n):

   A. Unearned revenue liability.

   B. Accounts receivable asset.

   C. Prepaid expense asset.

   Answer: C

   If a company pays cash before it recognizes the associated revenue it results in a prepaid expense asset.

4. An accrued expense liability is *most likely* recognized when:

   A. An expense is recognized before cash payment.

   B. Cash is paid prior to expense recognition.

   C. Revenue is recognized prior to the receipt of cash.

   Answer: A

   An accrued expense liability is recognized when an expense is recognized prior to cash payment.

5. Noncontrolling interests are typically presented under which balance sheet element?

   A. Assets

   B. Liabilities

   C. Equity

   Answer: C

   Noncontrolling interests (minority interests) are presented in the equity section on the balance sheet.

6. Provisions are typically presented under which balance sheet element?

   A. Assets

   B. Liabilities

   C. Equity

   Answer: B

   Provisions are typically presented under liabilities on the balance sheet.

7. Which of the following is *least likely* an example of the measurement bases used to value items listed on the balance sheet?

   A. Present value

   B. Current cost

   C. Economic cost

   Answer: C

Economic cost is not a measurement base. The measurement bases of assets and liabilities include fair value, historical cost, current cost, and present value.

8. Which of the following is *least likely* included in the statement of changes in shareholders' equity?

   A. Accumulated other comprehensive income

   B. Treasury stock

   C. Interest received

   Answer: C

   Interest received is typically listed on the income statement, not in the statement of changes in shareholders' equity.

9. Mike sold goods worth $4,500, but is yet to receive cash for them. This will *most likely* lead to an increase in:

   A. Accrued revenue.

   B. Deferred expense.

   C. Deferred revenue.

   Answer: A

   Revenue reported on the income statement before cash is received results in accrued revenue or accounts receivable, which is an asset.

10. Which of the following is *least likely* to be reported as a liability on the balance sheet?

    A. Deferred revenue

    B. Prepaid expense

    C. Accrued expense

    Answer: B

    Prepaid expense arises when a company pays cash before expense is reported on the income statement, and is an **asset** for the company.

11. Assets should *most likely* be recognized on the financial statements if:

    A. The item's useful life can be measured reliably.

B. The item has physical substance.

C. The item has a cost or value that can be measured reliably.

Answer: C

Physical substance and reliable measurement of the asset's useful life are not criteria for recognizing assets on the financial statements.

12. Which of the following will *most likely* lead to a decrease in equity?

A. Dividends paid

B. Profits

C. Owners' contribution

Answer: A

Profits and owners' contributions lead to an **increase** in equity.

13. Which of the following is *least likely* to be included in equity?

A. Retained earnings

B. Bank borrowings

C. Noncontrolling interest

Answer: B

Bank borrowings are a liability for a company and not included in equity.

14. Which of the following is *least likely* a format for the balance sheet?

A. Report format

B. Multi-step format

C. Account format

Answer: B

A balance sheet may either be presented in an account format or a report format. The multi-step format may be used to prepare an income statement.

15. When various classes of assets and liabilities are grouped together in a balance sheet, it is referred to as a:

A. Classified balance sheet.

B. Pro-forma balance sheet.

C. Common-size balance sheet.

Answer: A

In a classified balance sheet, different types of assets and liabilities are grouped into subcategories to give a more effective overview of the company's financial position.

16. Working capital is the excess of a company's:

A. Assets over its liabilities.

B. Noncurrent liabilities over its noncurrent assets.

C. Current assets over its current liabilities.

Answer: C

Working capital is calculated as current assets less current liabilities.

17. Which of the following is an analyst *most likely* to examine in order to learn more about a firm's operating activities?

A. Dividends declared

B. Accounts receivable

C. Goodwill

Answer: B

If an analyst wants to evaluate a company's operating activities, she is likely to review its current assets including accounts receivable.

18. Which of the following is *least likely* a current liability?

A. Trade payables expected to be settled within 18 months after the balance sheet date.

B. Financial liabilities expected to be settled within 1 year after the balance sheet date, whose original term was 3 years.

C. A liability that the entity has an unconditional right to defer settlement of for 2 years after the balance sheet date.

Answer: C

International Accounting Standards allow some liabilities such as trade payables and accruals for employees to be classified as current liabilities even though they might not be settled within 1 year.

Financial liabilities expected to be settled within 1 year are classified as current liabilities even if their original term was more than 1 year.

If the entity has an unconditional right to defer the settlement of the liability for at least 1 year after the balance sheet date, it must recognize it as a noncurrent liability.

19. Bizcom International uses historical cost as a measurement base for its assets, while Telecard Inc. uses fair value. Given that over the past few years, prices of noncurrent assets have significantly increased, Bizcom is *most likely* to report:

    A. Higher assets than Telecard.

    B. Lower assets than Telecard.

    C. The same amount of assets as Telecard.

    Answer: B

    Telecard reports its assets at fair value and therefore, reflects the current higher prices on its balance sheet.

20. Three years ago, a company borrowed $20,000 to finance the purchase of a machine that cost $60,000. Given that the company uses historical cost to measure its assets and has charged accumulated depreciation of $10,000 over the 3 years, which of the following statements is *most likely*?

    The company will report:

    A. A gross asset of $30,000.

    B. A liability of $20,000.

    C. An asset of $60,000.

    Answer: B

    As the company borrowed money to purchase the asset, $20,000 is a liability for the company.

    The company will also report a gross asset of $60,000 and a net asset of $50,000 (Cost – Accumulated depreciation).

21. Which of the following is *least likely* included in inventory cost?

    A. Normal wastage

    B. Costs of conversion

    C. Costs incurred to store the final goods

    Answer: C

    Costs incurred to store finished product are not included in the cost of inventory.

22. A company purchases inventory and incurs the following costs:

    Direct material = $14,000

    Direct labor = $9,000

    Abnormal overheads = $8,000

    Administrative overheads = $10,000

    Normal wastage of materials = $3,000

    Storage cost of raw material = $12,000

    Inventory reported on the company's balance sheet is *closest to*:

    A. $38,000

    B. $36,000

    C. $26,000

    Answer: A

    Inventory = 14,000 + 9,000 + 3,000 + 12,000 = $38,000

23. Which of the following statements regarding inventory valuation is *most accurate*?

    A. Under IFRS, inventory is reported at the lower of fair value or net realizable value.

    B. Standard cost should take into account normal levels of material, labor, and excess capacity.

    C. The retail method reduces selling price by the gross profit margin to determine the cost of inventory.

Answer: C

Under IFRS, inventory is reported at the lower of **cost** or net realizable value.

Standard cost should take into account normal levels of material, labor, and **actual** capacity.

24. Which of the following is *most likely* classified as an identifiable intangible asset?

A. Trademarks

B. Land and buildings

C. Goodwill

Answer: A

Land and buildings are tangible assets, whereas goodwill is an unidentifiable intangible asset.

25. Goodwill based on a company's performance and its future prospects is *most likely* known as:

A. Accounting goodwill.

B. Economic goodwill.

C. Potential goodwill.

Answer: B

Accounting goodwill is based on accounting standards and is only reported for acquisitions when the purchase price exceeds the fair value of the acquired company's net assets.

Economic goodwill is not reflected on the balance sheet and is based on a company's performance and its future prospects.

26. Jacob wants to calculate and compare the financial ratios of two companies, Alpha Inc. and Beta Inc. He observes the following:

- Alpha Inc. has acquired several subsidiaries and has recognized the associated goodwill amounting to $40,000. Further, the company has recognized impairment of goodwill amounting to $5,000.

- Beta Inc. has recognized internally generated goodwill amounting to $32,000.

Which of the following statements is *least accurate* regarding adjustments to be made by Jacob to the two companies' financial statements in order to make their ratios comparable?

A. Both of the companies' goodwill should be excluded from the balance sheet.

B. Only Beta Inc.'s goodwill should be excluded from the balance sheet, as it has been generated internally.

C. The impairment expense of $5,000 should be added back to Alpha Inc.'s income statement.

Answer: B

Income statement values should be adjusted by removing (adding back) impairment expense and the balance sheet should be adjusted by excluding goodwill.

27. Held-to-maturity investments are *most likely* measured at:

A. Amortized cost.

B. Historical cost.

C. Fair value.

Answer: A

Held-to-maturity investments are measured at amortized cost.

28. Which of the following financial assets/liabilities is *least likely* to be measured at fair value?

A. Available-for-sale financial assets

B. Financial liabilities held for trading

C. Loans and receivables

Answer: C

Loans and receivables are measured at **amortized cost**.

29. Which of the following financial assets/liabilities is *most likely* to be measured at amortized cost?

A. Bonds payable

B. Derivatives

C. Nonderivative instruments with face value exposures hedged by derivatives

Answer: A

Bonds payable are measured at amortized cost.

Derivative instruments and nonderivative instruments with face value exposures hedged by derivatives are measured at **fair value**.

30. Which of the following statements regarding available-for-sale securities is *least accurate*?

A. They are neither expected to be traded in the near term, nor held till maturity.

B. They are reported at fair market value on the balance sheet.

C. Gains and losses associated with these securities are reported on the income statement.

Answer: C

Only **realized** gains and losses associated with available-for-sale securities are reported on the income statement. Unrealized gains and losses associated with these securities are reported in the statement of changes in shareholders' equity.

31. Which of the following statements regarding held-to-maturity securities is *most accurate*?

A. Unrealized gains and losses from changes in market value are ignored and not recognized on the financial statements.

B. They are purchased with the intent of holding them for at least 10 years.

C. Realized gains and losses are included in other comprehensive income as part of shareholders' equity.

Answer: A

In order to classify securities as held to maturity, a company should have the intent as well as the ability to hold the investment until maturity.

Realized gains and losses are recognized on the income statement.

32. Shares that are currently owned by common shareholders are *most likely* referred to as:

    A. Outstanding shares.

    B. Issued shares.

    C. Authorized shares.

    Answer: A

    Authorized shares are the maximum number of shares that can be sold under the company's Articles of Incorporation.

    Issued shares are the total number of shares that have been sold to shareholders.

    Outstanding shares equal the number of shares that were issued less the number of shares repurchased.

33. Cromwell Associates has 15 million authorized shares, 8 million issued shares, and 6.5 million outstanding shares. Which of the following statements regarding Cromwell Associates is *most accurate*?

    A. Treasury stock amounts to 1.5 million shares.

    B. Holders of 8 million shares have voting rights.

    C. Holders of 8 million shares are entitled to receive dividends.

    Answer: A

    The company issued 8 million shares and currently only has 6.5 million shares outstanding, which implies that it has repurchased 1.5 million shares. Treasury stock is not entitled to dividends, nor does it have voting rights.

34. Which of the following statements regarding vertical common-size balance sheet is *least accurate*?

    A. It allows an analyst to perform cross-sectional analysis across firms within the same industry.

    B. It allows an analyst to perform time-series analysis.

C. It expresses each balance sheet item as a percentage of noncurrent assets.

Answer: C

A vertical common-size balance sheet expresses each balance sheet item as a percentage of **total assets**.

35. In order to evaluate a company's ability to settle its short-term obligations, an analyst is *most likely* to calculate:

A. Profitability ratios.

B. Liquidity ratios.

C. Solvency ratios.

Answer: B

Solvency ratios evaluate a company's ability to settle **long-term** obligations, while **liquidity** ratios evaluate its ability to settle short-term obligations.

36. In order to evaluate a company's ability to meet its long-term obligations, an analyst will *most likely* examine its:

A. Total debt ratio.

B. Net operating cycle.

C. Quick ratio.

Answer: A

The total debt ratio (total debt divided by total assets) is a solvency ratio used to evaluate a company's ability to settle its long-term obligations.

Use the following information relating to JB Associates to answer Questions 37 to 40:

- Cash = $22,250
- Marketable securities = $13,480
- Receivables = $4,330
- Inventory = $4,240

- Noncurrent assets = $79,700
- Current liabilities = $31,450
- Long-term liabilities = $33,340
- Equity = $59,210

37. The company's current ratio is *closest to*:

    A. 1.28

    B. 0.98

    C. 1.41

    Answer: C

    Current ratio = Current assets / Current liabilities

    Current assets = 22,250 + 13,480 + 4,330 + 4,240 = $44,300

    Current ratio = 44,300 / 31,450 = 1.4086

38. The company's quick ratio is *closest to*:

    A. 0.98

    B. 0.85

    C. 1.27

    Answer: C

    Quick ratio = (Cash + Marketable securities + Receivables) / Current liabilities

    Quick ratio = (22,250 + 13,480 + 4,330) / 31,450

    Quick ratio = 40,060 / 31, 450 = 1.2738

39. The company's long-term debt-to-equity ratio is *closest to*:

    A. 1.09

    B. 0.56

    C. 0.53

    Answer: B

    Long-term debt-to-equity ratio = Long-term debt / Equity

Long-term debt-to-equity ratio = 33,340 / 59,210 = 0.5631

40. The company's financial leverage ratio is *closest to*:

A. 2.09

B. 1.35

C. 0.75

Answer: A

Financial leverage ratio = Total assets / Total equity

Total assets = 44,300 + 79,700 = $124,000

Financial leverage ratio = 124,000 / 59,210 = 2.0942

Reading 27: Understanding the Cash Flow Statement

1. Proceeds from sale of securities held for trading are classified as:
   A. CFO.
   B. CFI.
   C. CFF.
2. Under U.S. GAAP, dividend payments are classified as:
   A. CFO.
   B. CFI.
   C. CFF.
3. Under IFRS, dividends received may be classified as:
   A. CFO or CFI.
   B. CFI or CFF.
   C. CFO or CFF.
4. Under IFRS, interest paid may be classified as:
   A. CFI or CFF.
   B. CFO or CFF.
   C. CFO only.
5. Under U.S. GAAP, interest and dividends received may be classified as:
   A. CFF only.
   B. CFO only.
   C. CFF or CFO.
6. Which of the following is *most likely* a source of cash for a company?
   A. An increase in accounts receivable

B. A decrease in accounts payable

C. An increase in wages payable

7. Which of the following is *most likely* a use of cash for a company?

   A. An increase in accounts payable

   B. An increase in inventory

   C. A decrease in accounts receivable

8. If depreciation expense was understated in a company's financials, CFO presented under the indirect method, assuming a tax-free environment, is *most likely*:

   A. Accurately stated.

   B. Understated.

   C. Overstated.

9. A company has a net income of $150, an increase in accounts receivable of $30, depreciation of $55, and a decrease in accounts payable of $25. Its operating cash flow is *closest to*:

   A. $200

   B. $150

   C. $95

10. Given the following information for a company, its CFO is *closest to*:

Net income	$1,000
Decrease in interest payable	$85
Gain on sale of equipment	$45
Increase in accounts payable	$90
Decrease in inventory	$35
Increase in prepaid assets	$105
Depreciation	$85
Increase in taxes payable	$125

   A. $1,100

B. $1,250

C. $1,050

11. Using the following information and assuming that U.S. GAAP applies, the company's CFI is *closest to*:

Proceeds from sale of equipment	$32,000
Loss on equipment sale	$9,000
Dividends paid	$12,500
Purchase of office premises	$100,000
Common stock repurchases	$45,000
Dividends received	$8,500
Interest received	$1,200
Supplier accounts paid	$3,700
Cash collections from customers	$14,200
Ending cash balance	$98,000

A. −$145,000

B. −$68,000

C. $12,000

12. Using the following information and assuming that U.S. GAAP applies, the company's CFI is *closest to*:

Net income	$23,000
Operating cash flow	$10,000
Financing cash flow	$24,000
Non-cash expenses	$19,000
Change in cash and cash equivalents	$6,000
Cash spent on acquisitions	$19,000

A. −$28,000

B. $42,000

C. −$19,000

Use the following information to answer Questions 13 and 14:

The following information relates to XYZ Company for 2009:

Net income	$2,050
Depreciation	$345
Interest expense	$150
Tax rate	30%
Net capital expenditure	$1,500
Debt repaid	$20
Working capital investment	$325
Funds borrowed	$1,500

13. XYZ's free cash flow to the firm for 2009 is *closest to*:

    A. $675

    B. $615

    C. $720

14. XYZ's free cash flow to equity for 2009 is *closest to*:

    A. $5,050

    B. $2,050

    C. $2,090

15. Capital One Bank provided $2.5 million to Pharma One Pvt. Ltd. (a pharmaceutical company) as a loan to be repaid in 5 years. Which of the following is the *most accurate* classification of this transaction by both the parties?

	Capital One	**Pharma One**
A	Financing activity	Financing activity
B	Financing activity	Investing activity
C	Operating activity	Financing activity

16. Sparta Inc. is a manufacturer of heavy machinery, but frequently invests in securities that it classifies as held to maturity. The outflow of cash for these investments is *most likely* classified as a(n):

    A. Operating activity.

    B. Investing activity.

    C. Financing activity.

17. Which of the following is *least likely* classified as a financing activity under U.S. GAAP?

    A. A manufacturing firm paying dividends

    B. A bank issuing common stock

    C. A bank receiving interest payments on a loan

18. Which of the following is *least likely* an investing activity under IFRS?

    A. A manufacturing company receiving an interest payment on a loan.

    B. A manufacturing firm investing in held-for-trading securities.

    C. A manufacturing firm investing in property, plant, and equipment.

19. Howard Inc. (a manufacturing concern) uses U.S. GAAP to report its financial statement. Which of the following is *most likely* to be classified as an investing activity by this firm?

    A. Sale of securities classified as available-for-sale.

    B. Receipt of dividends on investments.

    C. Payment of interest on a loan.

20. Assuming U.S. GAAP, which of the following is *most likely* classified as a financing activity by a trading company?

    A. Dividends paid

    B. Dividends received

    C. Interest received

21. Assuming IFRS, which of the following is *most likely* classified as a financing activity by a manufacturing company?

    A. Dividends received

B. Interest paid

C. Indirect borrowings using accounts payable

22. Green Inc. operates a chain of supermarkets in Europe. Assuming IFRS, which of the following is *least likely* classified as a financing activity by Green?

A. Cash payments to repurchase stock

B. Interest received

C. Dividends paid

23. Gamma Corporation is involved in the manufacturing of parts for the aerospace industry. Assuming U.S. GAAP applies, which of the following is *least likely* classified as an investing activity by the firm?

A. Investing in securities classified as held-for-trading.

B. Acquisition of a subsidiary.

C. Cash paid to purchase intangible assets.

Use the following information to answer Questions 24 to 27:

Aquamarine Inc. is manufacturer of perfumes and has several retail outlets throughout Europe. The company uses IFRS to report its financial statements and it recently entered into the following transactions:

- **Transaction 1:** Borrowed money from a bank for the purchase of inventory worth $180,000.
- **Transaction 2:** Made sales amounting to $990,000, of which $38,000 were made on credit.
- **Transaction 3:** Invested excess cash amounting to $12,000 in securities classified as held for trading and $8,000 in securities classified as held to maturity.
- **Transaction 4:** Paid dividends amounting to $130,000.

24. Transaction 1 will *most likely*:

A. Increase Aquamarine's cash flow from operating activities by $180,000.

B. Decrease Aquamarine's cash flow from investing activities by

$180,000.

C. Increase Aquamarine's cash flow from financing activities by $180,000.

25. Which of the following is the *least likely* effect on Aquamarine's financial statements due to Transaction 2?

    A. An increase in cash flow from operating activities of $990,000.

    B. An increase in receivables of $38,000.

    C. An increase in cash flow from operating activities of $952,000.

26. Which of the following statements is *most accurate* regarding Transaction 3?

    A. It will increase cash flow from investing activities by $8,000.

    B. It will decrease cash flow from operating activities by $12,000.

    C. It will decrease cash flow from investing activities by $20,000.

27. Where is Transaction 4 *least likely* to be reported in Aquamarine's cash flow statement?

    A. Operating activities

    B. Investing activities

    C. Financing activities

28. Which of the following statements is *least accurate*?

    A. The indirect method explicitly lists the actual sources of operating cash inflows and outflows.

    B. The indirect method provides a list of items that are responsible for the difference between net income and operating cash flow.

    C. The direct method of calculating cash flow from operations starts with cash sales and deducts all cash payments for direct and indirect costs.

29. During 2009, Royal Superstores saw its accounts receivable and inventory increase by $5,600 and $3,700 respectively. At the same time, its accounts payable increased by $2,500. Based only on this information, the company's cash flow from operations will *most likely:*

A. Increase by $6,800.

B. Decrease by $9,300.

C. Decrease by $6,800.

30. A company reported the following information:

Cash received from customers = $27,300

Cash paid to suppliers = $11,400

Cash paid for other operating expenses = $7,400

Cash paid for income taxes = $3,250

The company's cash flow from operating activities is *closest to*:

A. $8,500

B. $15,900

C. $5,250

Use the following information regarding Pyramid Construction Inc. to answer Questions 31 to 33:

- Net income = $1,120,000
- Depreciation expense for the year = $27,000
- Decrease in inventory = $13,800
- Increase in taxes payable = $1,500
- Issuance of common stock = $60,000
- Dividends paid = $32,300
- Purchase of land = $28,300
- Investment in associate = $58,000
- Purchase of held-for-trading securities = $7,200
- Sale of available-for-sale securities = $84,700

Assume the company uses U.S. GAAP to prepare its financial statements.

31. The company's cash flow from operations is *closest to*:

A. $1,155,100

B. $1,162,300

C. $1,130,000

32. The company's cash flow from investing activities is *closest to*:

A. $26,700

B. $56,400

C. −$1,600

33. The company's cash flow from financing activities is *closest to*:

A. $60,000

B. $92,300

C. $27,700

34. Solitaire Inc. prepares its financial statements according to U.S. GAAP. During 2009, the company earned net income amounting to $102 million. During the year, it purchased machinery worth $22 million and recognized a total depreciation expense of $2.4 million. The company also paid an annual dividend amounting to $1.5 million. Based on this information, the company's cash flow from operations is *closest to*:

A. $100.5 million.

B. $104.4 million.

C. $80.9 million.

35. Beta Inc. is an exporter of refined sugar. During 2009, it earned net income of $104,000, purchased inventory worth $13,000, and invested in new machinery worth $28,000. The company had previously invested in available-for-sale securities which were sold during the year for $8,000. The company's cash flow from investing activities is *closest to*:

A. −$20,000

B. $28,000

C. −$33,000

36. Tiara Corporation reported net income of $8 million for the year 2009.

Total revenue and cost of goods sold for the period amounted to $35 million and $20 million respectively. If accounts receivable increased by $5 million during the period, cash received from customers during the period was *closest to*:

A. $20 million.

B. $30 million.

C. $40 million.

37. Magma Industries Ltd. reported net profit of $104 million for 2009 with revenues of $500 million and COGS of $270 million. During the period, Magma made purchases worth $40 million. If the company's accounts payable increased by $4 million, cash paid to the company's suppliers was *closest to*:

A. $36 million.

B. $44 million.

C. $186 million.

Use the following information regarding Luxury Interiors to answer Questions 38 and 39:

- Revenue = $85 million
- Cost of goods sold = $44 million
- Decrease in inventory = $7 million
- Increase in accounts payable = $4 million
- Decrease in accounts receivable = $5 million

38. Cash paid to suppliers is *closest to*:

A. $37 million.

B. $47 million.

C. $33 million.

39. Cash received from customers is *closest to*:

A. $90 million.

B. $80 million.

C. \$73 million.

40. Consider the following two statements:

Statement 1: Companies should ideally have net income that exceeds operating cash flows.

Statement 2: The variability of operating cash flow and net income is an important determinant of the overall risk inherent in the company.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Use the following information regarding Stylish Clothing Inc. to answer Questions 41 and 42:

- Net income = \$880,000
- Cost of goods sold = \$600,000
- Depreciation expense = \$49,000
- Interest expense = \$27,000
- Investment in fixed assets = \$32,000
- Investment in working capital = \$13,000
- Funds borrowed = \$16,000
- Debt repaid = \$10,000
- Marginal tax rate = 40%

41. Free cash flow to the firm is *closest to*:

A. \$911,000

B. \$900,200

C. \$893,200

42. Free cash flow to equity is *closest to*:

A. \$890,000

B. \$916,000

C. $911,000

43. Which of the following statements is *most accurate*?

A. The cash to income ratio measures the ability of the business operations to generate cash.

B. The debt coverage ratio measures the ability of the company to meet interest expenses.

C. The reinvestment ratio measures the ability of the company to buy long-term assets from investing cash flows.

Reading 27: Understanding the Cash Flow Statement

1. Proceeds from sale of securities held for trading are classified as:

   A. CFO.

   B. CFI.

   C. CFF.

   Answer: A

   Proceeds from sale of securities held for trading are classified as CFO.

2. Under U.S. GAAP, dividend payments are classified as:

   A. CFO.

   B. CFI.

   C. CFF.

   Answer: C

   Under U.S. GAAP, dividend payments are classified as CFF.

3. Under IFRS, dividends received may be classified as:

   A. CFO or CFI.

   B. CFI or CFF.

   C. CFO or CFF.

   Answer: A

   Under IFRS, dividends received may be classified as CFO or CFI.

4. Under IFRS, interest paid may be classified as:

   A. CFI or CFF.

   B. CFO or CFF.

   C. CFO only.

   Answer: B

Under IFRS, interest paid may be classified as CFO or CFF.

5. Under U.S. GAAP, interest and dividends received may be classified as:

   A. CFF only.

   B. CFO only.

   C. CFF or CFO.

   Answer: B

   Under U.S. GAAP, interest and dividends received can only be classified as CFO.

6. Which of the following is *most likely* a source of cash for a company?

   A. An increase in accounts receivable

   B. A decrease in accounts payable

   C. An increase in wages payable

   Answer: C

   An increase in wages payable (liability) is a source of cash.

7. Which of the following is *most likely* a use of cash for a company?

   A. An increase in accounts payable

   B. An increase in inventory

   C. A decrease in accounts receivable

   Answer: B

   An increase in inventory (asset) is a use of cash.

8. If depreciation expense was understated in a company's financials, CFO presented under the indirect method assuming a tax-free environment is *most likely*:

   A. Accurately stated.

   B. Understated.

   C. Overstated.

   Answer: A

A change in depreciation has no impact on cash flow whatsoever. An increase in depreciation would reduce net income (the starting point of the indirect cash flow statement), but have no effect on total cash flow.

9. A company has a net income of $150, an increase in accounts receivable of $30, depreciation of $55, and a decrease in accounts payable of $25. Its operating cash flow is *closest to*:

   A. $200

   B. $150

   C. $95

   Answer: B

   Operating cash flow = 150 – 30 + 55 – 25 = $150.

10. Given the following information for a company, its CFO is *closest to*:

Net income	$1,000
Decrease in interest payable	$85
Gain on sale of equipment	$45
Increase in accounts payable	$90
Decrease in inventory	$35
Increase in prepaid assets	$105
Depreciation	$85
Increase in taxes payable	$125

   A. $1,100

   B. $1,250

   C. $1,050

   Answer: A

   CFO = 1,000 – 85 – 45 + 90 + 35 – 105 + 85 +125 = $1,100

11. Using the following information and assuming that U.S. GAAP applies, the company's CFI is *closest to*:

Proceeds from sale of equipment	$32,000

Loss on equipment sale	$9,000
Dividends paid	$12,500
Purchase of office premises	$100,000
Common stock repurchases	$45,000
Dividends received	$8,500
Interest received	$1,200
Supplier accounts paid	$3,700
Cash collections from customers	$14,200
Ending cash balance	$98,000

A. −$145,000

B. −$68,000

C. $12,000

Answer: B

CFI = 32,000 – 100,000 = −$68,000

12. Using the following information and assuming that U.S. GAAP applies, the company's CFI is *closest to*:

Net income	$23,000
Operating cash flow	$10,000
Financing cash flow	$24,000
Noncash expenses	$19,000
Change in cash and cash equivalents	$6,000
Cash spent on acquisitions	$19,000

A. −$28,000

B. $42,000

C. −$19,000

Answer: A

CFI = Change in cash – CFO – CFF = 6,000 – 10,000 – 24,000 = –

$28,000

Use the following information to answer Questions 13 and 14:

The following information relates to XYZ Company for 2009:

Net income	$2,050
Depreciation	$345
Interest expense	$150
Tax rate	30%
Net capital expenditure	$1,500
Net debt repayment	$20
Working capital investment	$325
Net borrowing	$1,500

13. XYZ's free cash flow to the firm for 2009 is *closest to*:

    A. $675

    B. $615

    C. $720

    Answer: A

    FCFF = 2,050 + 345 + (150 × (1 – 0.3)) – 1,500 – 325 = $675

14. XYZ's free cash flow to equity for 2009 is *closest to*:

    A. $5,050

    B. $2,050

    C. $2,090

    Answer: B

    CFO = 2,050 + 345 – 325 = $2,070

    FCFE = 2,070 – 1,500 + 1,500 – 20 = $2,050

15. Capital One Bank provided $2.5 million to Pharma One Pvt. Ltd. (a pharmaceutical company) as a loan to be repaid in 5 years. Which of the following is the *most accurate* classification of this transaction by both the parties?

	Capital One	Pharma One
A	Financing activity	Financing activity
B	Financing activity	Investing activity
C	Operating activity	Financing activity

Answer: C

Lending is a normal business activity for a bank and is therefore classified as an operating activity. Pharma One classifies the loan as a financing activity.

16. Sparta Inc. is a manufacturer of heavy machinery, but frequently invests in securities that it classifies as held to maturity. The outflow of cash for these investments is *most likely* classified as a(n):

    A. Operating activity.

    B. Investing activity.

    C. Financing activity.

    Answer: B

    Investments in securities classified as held to maturity are represented as an investing activity.

17. Which of the following is *least likely* classified as a financing activity under U.S. GAAP?

    A. A manufacturing firm paying dividends

    B. A bank issuing common stock

    C. A bank receiving interest payments on a loan

    Answer: C

    Under U.S. GAAP, interest paid and interest received are both classified as operating activities for all companies.

18. Which of the following is *least likely* an investing activity under IFRS?

    A. A manufacturing company receiving an interest payment on a loan

    B. A manufacturing firm investing in held-for-trading securities

    C. A manufacturing firm investing in property, plant, and equipment

Answer: B

Under IFRS:

- Investment in securities classified as held-for-trading is represented as an operating activity.
- Receipt of interest on a loan may either be classified as an operating or an investing activity.
- Investment in property, plant, and equipment is classified as an investing activity.

19. Howard Inc. (a manufacturing concern) uses U.S. GAAP to report its financial statement. Which of the following is *most likely* to be classified as an investing activity by this firm?

A. Sale of securities classified as available for sale.

B. Receipt of dividends on investments.

C. Payment of interest on a loan.

Answer: A

Sale of securities classified as available-for-sale is represented as an investing activity.

Dividends received and interest paid are both **operating** activities under U.S. GAAP.

20. Assuming U.S. GAAP, which of the following is *most likely* classified as a financing activity by a trading company?

A. Dividends paid

B. Dividends received

C. Interest received

Answer: A

Under U.S. GAAP, dividends paid are classified as financing activity, while dividends and interest received are classified as **operating** activities.

21. Assuming IFRS, which of the following is *most likely* classified as a financing activity by a manufacturing company?

A. Dividends received

B. Interest paid

C. Indirect borrowings using accounts payable

Answer: B

Under IFRS, interest paid may either be classified as an operating or a financing activity. Dividends received may either be classified as an operating or an **investing** activity.

Indirect borrowings through accounts payable is classified as an **operating** activity.

22. Green Inc. operates a chain of supermarkets in Europe. Assuming IFRS, which of the following is *least likely* classified as a financing activity by Green?

A. Cash payments to repurchase stock

B. Interest received

C. Dividends paid

Answer: B

Under IFRS, interest received may either be classified as an **operating** or an **investing** activity.

23. Gamma Corporation is involved in the manufacture of parts for the aerospace industry. Assuming U.S. GAAP applies, which of the following is *least likely* classified as an investing activity by the firm?

A. Investing in securities classified as held for trading

B. Acquisition of a subsidiary

C. Cash paid to purchase intangible assets

Answer: A

Under U.S. GAAP, investing in securities classified as held for trading is classified as an **operating** activity.

Use the following information to answer Questions 24 to 27:

Aquamarine Inc. is a manufacturer of perfumes and has several retail outlets throughout Europe. The company uses IFRS to report its financial statements and it recently entered into the following transactions:

- **Transaction 1:** Borrowed money from a bank for the purchase of inventory worth $180,000.
- **Transaction 2**: Made sales amounting to $990,000, of which $38,000 were made on credit.
- **Transaction 3:** Invested excess cash amounting to $12,000 in securities classified as held for trading and $8,000 in securities classified as held to maturity.
- **Transaction 4:** Paid dividends amounting to $130,000.

24. Transaction 1 will *most likely*:

    A. Increase Aquamarine's cash flow from operating activities by $180,000.

    B. Decrease Aquamarine's cash flow from investing activities by $180,000.

    C. Increase Aquamarine's cash flow from financing activities by $180,000.

    Answer: C

    Borrowing money is a financing activity for the company.

25. Which of the following is the *least likely* effect on Aquamarine's financial statements due to Transaction 2?

    A. An increase in cash flow from operating activities of $990,000.

    B. An increase in receivables of $38,000.

    C. An increase in cash flow from operating activities of $952,000.

    Answer: A

    The company made cash sales of $952,000 (990,000 – 38,000).

    Sales made on credit will increase the company's receivables by $38,000.

26. Which of the following statements is *most accurate* regarding Transaction 3?

    A. It will increase cash flow from investing activities by $8,000.

B. It will decrease cash flow from operating activities by $12,000.

C. It will decrease cash flow from investing activities by $20,000.

Answer: B

Investments in held-for-trading securities are classified as an operating activity, while investments in held-to-maturity securities are classified as an investing activity.

27. Where is Transaction 4 *least likely* to be reported in Aquamarine's cash flow statement?

A. Operating activities

B. Investing activities

C. Financing activities

Answer: B

Under IFRS, dividends paid may either be reported as an outflow from operating or financing activities.

28. Which of the following statements is *least accurate*?

A. The indirect method explicitly lists the actual sources of operating cash inflows and outflows.

B. The indirect method provides a list of items that are responsible for the difference between net income and operating cash flow.

C. The direct method of calculating cash flow from operations starts with cash sales and deducts all cash payments for direct and indirect costs.

Answer: A

The **direct** method explicitly lists the actual sources of operating cash inflows and outflows.

29. During 2009, Royal Superstores saw its accounts receivable and inventory increase by $5,600 and $3,700 respectively. At the same time, its accounts payable increased by $2,500. Based only on this information, the company's cash flow from operations will *most likely:*

A. Increase by $6,800.

B. Decrease by $9,300.

C. Decrease by $6,800.

Answer: C

Increases in accounts receivable and inventory are uses of cash while the increase in accounts payable is a source of cash.

Therefore, CFO will decrease by $6,800 (−5,600 – 3,700 + 2,500).

30. A company reported the following information:

Cash received from customers = $27,300

Cash paid to suppliers = $11,400

Cash paid for other operating expenses = $7,400

Cash paid for income taxes = $3,250

The company's cash flow from operating activities is *closest* to?

A. $8,500

B. $15,900

C. $5,250

Answer: C

Cash flow from operating activities = Cash received from customers – Cash paid to suppliers – Cash paid for other operating expenses – Cash paid for taxes

Therefore, CFO = 27,300 – 11,400 – 7,400 – 3,250 = $5,250

Use the following information regarding Pyramid Construction Inc. to answer Questions 31 to 33:

- Net income = $1,120,000
- Depreciation expense for the year = $27,000
- Decrease in inventory = $13,800
- Increase in taxes payable = $1,500
- Issuance of common stock = $60,000
- Dividends paid = $32,300

- Purchase of land = $28,300
- Investment in associate = $58,000
- Purchase of held-for-trading securities = $7,200
- Sale of available-for-sale securities = $84,700

Assume the company uses U.S. GAAP to prepare its financial statements.

31. The company's cash flow from operations is *closest to*:

    A. $1,155,100

    B. $1,162,300

    C. $1,130,000

    Answer: A

    CFO = Net income + Depreciation + Decrease in inventory + Increase in taxes payable – Purchase of held-for-trading securities

    CFO = 1,120,000 + 27,000 + 13,800 + 1,500 – 7,200 = $1,155,100

32. The company's cash flow from investing activities is *closest to*:

    A. $26,700

    B. $56,400

    C. −$1,600

    Answer: C

    CFI = Sale of available-for-sale securities – Purchase of land – Investment in associate

    CFI = 84,700 – 28,300 – 58,000 = −$1,600

33. The company's cash flow from financing activities is *closest to*:

    A. $60,000

    B. $92,300

    C. $27,700

    Answer: C

    CFF = Issuance of common stock – Dividends paid

CFF = 60,000 – 32,300 = $27,700

34. Solitaire Inc. prepares its financial statements according to U.S. GAAP. During 2009, the company earned net income amounting to $102 million. During the year, it purchased machinery worth $22 million and recognized a total depreciation expense of $2.4 million. The company also paid an annual dividend amounting to $1.5 million. Based on this information, the company's cash flow from operations is *closest to*:

   A. $100.5 million.

   B. $104.4 million.

   C. $80.9 million.

   Answer: B

   CFO = Net income + Depreciation expense

   CFO = 102 + 2.4 = $104.4 million

35. Beta Inc. is an exporter of refined sugar. During 2009, it earned net income of $104,000, purchased inventory worth $13,000 and invested in new machinery worth $28,000. The company had previously invested in available-for-sale securities which were sold during the year for $8,000. The company's cash flow from investing activities is *closest to*:

   A. −$20,000

   B. $28,000

   C. −$33,000

   Answer: A

   CFI = Sale of available-for-sale securities – Investment in new machinery

   CFI = 8,000 – 28,000 = −$20,000

36. Tiara Corporation reported net income of $8 million for the year 2009. Total revenue and cost of goods sold for the period amounted to $35 million and $20 million respectively. If accounts receivable is increased by $5 million during the period, cash received from

customers during the period was *closest to*:

A. $20 million.

B. $30 million.

C. $40 million.

Answer: B

Cash received from customers = Revenue – Increase in accounts receivable

Cash received from customers = 35 – 5 = $30 million

37. Magma Industries Ltd. reported net profit of $104 million for 2009 with revenues of $500 million and COGS of $270 million. During the period, Magma made purchases worth $40 million. If the company's accounts payable increased by $4 million, cash paid to the company's suppliers was *closest to*:

A. $36 million.

B. $44 million.

C. $186 million.

Answer: A

Cash paid to suppliers = Purchases – Increase in accounts payable

Cash paid to suppliers = 40 – 4 = $36 million

Use the following information regarding Luxury Interiors to answer Questions 38 and 39:

- Revenue = $85 million
- Cost of goods sold = $44 million
- Decrease in inventory = $7 million
- Increase in accounts payable = $4 million
- Decrease in accounts receivable = $5 millions

38. Cash paid to suppliers is *closest to*:

A. $37 million.

B. $47 million.

C. $33 million.

Answer: C

Cash paid to suppliers = Purchases – Increase in accounts payable

Purchases = Cost of goods sold – Decrease in inventory

Purchases = 44 – 7 = $37 million

Therefore, cash paid to suppliers = 37 – 4 = $33 million

39. Cash received from customers is *closest to*:

A. $90 million.

B. $80 million.

C. $73 million.

Answer: A

Cash received from customers = Revenue + Decrease in accounts receivable

Cash received by the company = 85 + 5 = $90 million

40. Consider the following two statements:

Statement 1: Companies should ideally have net income that exceeds operating cash flows.

Statement 2: The variability of operating cash flow and net income is an important determinant of the overall risk inherent in the company.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: B

Companies should ideally have operating cash flows that exceed net income.

Use the following information regarding Stylish Clothing Inc. to answer Questions 41 and 42:

- Net income = $880,000
- Cost of goods sold = $600,000
- Depreciation expense = $49,000
- Interest expense = $27,000
- Investment in fixed assets = $32,000
- Investment in working capital = $13,000
- Funds borrowed = $16,000
- Debt repaid = $10,000
- Marginal tax rate = 40%

41. Free cash flow to the firm is *closest to*:

    A. $911,000

    B. $900,200

    C. $893,200

    Answer: B

    FCFF = NI + NCC + [Int × (1 – tax rate)] – FCInv – WCInv

    FCFF = 880,000 + 49,000 + [27,000 × (1 – 0.4)] – 32,000 – 13,000 = $900,200

42. Free cash flow to equity is *closest to*:

    A. $890,000

    B. $916,000

    C. $911,000

    Answer: A

    FCFE = CFO – FCInv + Net borrowing

    CFO = FCFF + FCInv – [Int × (1 – tax rate)]

    CFO = 900,200 + 32,000 – [27,000 × (1 – 0.4)] = $916,000

    FCFE = 916,000 – 32,000 + 16,000 – 10,000 = $890,000

43. Which of the following statements is *most accurate*?

A. The cash to income ratio measures the ability of the business operations to generate cash.

B. The debt coverage ratio measures the ability of the company to meet interest expenses.

C. The reinvestment ratio measures the ability of the company to buy long-term assets from investing cash flows.

Answer: A

The debt coverage ratio measures leverage and financial risk.

The reinvestment ratio measures the ability to buy long-term assets with **operating** cash flows.

Reading 28: Financial Analysis Techniques

1. Which of the following is *most likely* to be used to conduct trend analysis?
   A. Horizontal common-size financial statements
   B. Vertical common-size financial statements
   C. Pie charts
2. Which of the following is *least likely* a limitation of ratio analysis?
   A. Companies may have several divisions that operate in different industries.
   B. Most companies around the world subscribe to the same set of accounting standards.
   C. There are no specified ranges within which particular ratios for companies must lie.
3. Which of the following classifications of ratios is *most likely* to be used to evaluate a firm's ability to meet its long-term debt obligations?
   A. Liquidity ratios
   B. Solvency ratios
   C. Activity ratios
4. Which of the following classifications of ratios is *least likely* to be used to evaluate a firm's operating efficiency?
   A. Profitability ratios
   B. Solvency ratios
   C. Activity ratios
5. Which of the following is *most likely* to indicate that a company has too many resources tied up in inventory?
   A. A relatively high inventory turnover ratio
   B. A relatively high number of days of inventory on hand

C. A relatively low net operating cycle

6. Which of the following is *most likely* to suggest that a company's low receivables turnover is due to credit management issues?

   A. A lower sales growth than competitors

   B. A higher sales growth than competitors

   C. A history of higher bad debts than competitors

7. Consider the following statements:

   Statement 1: The number of days of sales outstanding is inversely related to revenue.

   Statement 2: The number of days of inventory is directly related to average inventory.

   Which of the following is *most likely*?

   A. Both statements are correct.

   B. Both statement are incorrect.

   C. One of the statements is incorrect.

8. A company's balance sheet indicates that it has sufficient cash and short-term investments. However, its payables turnover ratio remains low. This *most likely* suggests that:

   A. The company has a liquidity crisis.

   B. The company's suppliers offer it lenient credit terms.

   C. The company has excellent receivables collection policies.

9. A higher working capital turnover *most likely* indicates:

   A. Higher operating efficiency.

   B. Poor liquidity management.

   C. Lower operating efficiency.

10. Which of the following companies is *least likely* to report a low fixed asset turnover ratio?

    A. A mature company operating in a labor-intensive business environment

B. A company that is just starting out

C. A company that is struggling to make sales due to high prices

11. An increase in which of the following will *most likely* result in a decrease in a company's cash conversion cycle?

A. Number of days of payables

B. Number of days of inventory

C. Number of days of receivables

12. An increase in which of the following ratios *most likely* suggests an improvement in a company's solvency position?

A. Debt-to-equity ratio

B. Financial leverage ratio

C. Fixed charge coverage ratio

13. Which of the following is *least likely* a financial sector ratio?

A. Capital adequacy

B. Net interest margin

C. Same store sales

The following financial statements relate to Magma Corporation:

INCOME STATEMENT

	2008 ($ '000)	**2009 ($ '000)**
Total revenue	242,500	367,700
Cost of goods sold	(112,300)	(197,500)
Gross profit	**130,200**	**170,200**
Depreciation	(12,900)	(16,800)
Salaries and wages	(7,700)	(8,100)
Electricity	(11,100)	(13,500)
Administrative expenses	(13,200)	(16,300)
Marketing	(17,200)	(22,200)

Operating lease payments	(14,000)	(17,100)
Operating income	**54,100**	**76,200**
Interest income	2,900	3,100
Interest expense	(2,100)	(2,400)
Income before taxes	**54,900**	**76,900**
Provision for income taxes	(24,000)	(23,000)
Net income	**30,900**	**53,900**

BALANCE SHEET

	2008 ($ ’000)	**2009 ($ ’000)**
Assets		
Long-term Assets		
Property, plant, and equipment	105,700	153,700
Investment in associates	68,600	80,600
Goodwill	47,100	54,100
Other long-term assets	38,500	44,500
Total Long-term Assets	**259,900**	**332,900**
Current Assets		
Inventory	4,900	6,200
Accounts receivable	5,300	7,500
Short-term marketable securities	6,200	8,300
Prepaid expenses	4,700	4,500
Cash	5,500	5,100

Total Current Assets	**26,600**	**31,600**
Total Assets	**286,500**	**364,500**
Shareholders' Equity and Liabilities		
Shareholders' Equity		
Common stock	100,000	100,000
10% Preferred stock	75,000	75,000
Retained earnings	31,000	42,500
Total Shareholders' Equity	**206,000**	**217,500**
Liabilities		
Long-term debt	72,000	134,700
Current Liabilities		
Accounts payable	4,700	6,700
Accrued expenses	3,800	5,600
Total Current Liabilities	**8,500**	**12,300**
Total Shareholders' Equity and Liabilities	**286,500**	**364,500**

Using the above information and assuming a tax rate of 40%, answer Questions 14 to 45:

14. Magma Corporation's inventory turnover for 2009 is *closest to*:

    A. 31.85

    B. 10.26

    C. 35.59

15. Magma Corporation’s number of days of inventory on hand for 2009 is *closest to*:

    A. 10.26 days.

    B. 11.46 days.

    C. 35.58 days.

16. Magma Corporation’s receivables turnover for 2009 is *closest to*:

    A. 49.03

    B. 69.38

    C. 57.45

17. Magma Corporation’s number of days of sales outstanding for 2009 is *closest to*:

    A. 7.44 days.

    B. 6.35 days.

    C. 5.26 days.

18. Magma Corporation’s payables turnover for 2009 is *closest to*:

    A. 34.65

    B. 34.88

    C. 29.67

19. Magma Corporation’s number of days of payables for 2009 is *closest to*:

    A. 10.53 days.

    B. 12.30 days.

    C. 10.47 days.

20. Magma Corporation’s working capital turnover for 2009 is *closest to*:

    A. 19.66

    B. 19.05

    C. 20.31

21. Magma Corporation’s fixed asset turnover for 2009 is *closest to*:

A. 1.10

B. 1.24

C. 1.41

22. Magma Corporation's total asset turnover for 2009 is *closest to*:

A. 1.13

B. 1.00

C. 1.28

23. Magma Corporation's current ratio for 2008 is *closest to*:

A. 2.57

B. 2.48

C. 3.13

24. Magma Corporation's quick ratio for 2008 is *closest to*:

A. 1.38

B. 2.00

C. 1.70

25. Magma Corporation's cash ratio for 2009 is *closest to*:

A. 1.09

B. 1.38

C. 1.70

26. Magma Corporation's liquidity position over 2009 (as measured by its current ratio) has *most likely*:

A. Improved.

B. Worsened.

C. Remained the same.

27. Magma Corporation's cash conversion cycle for 2009 is *closest to*:

A. 27.08 days.

B. 6.15 days.

C. 16.61 days.

28. Magma Corporation's debt-to-assets ratio for 2008 is *closest to*:

    A. 0.37

    B. 0.28

    C. 0.25

29. Magma Corporation's solvency position over 2009 (as measured by its debt-to-assets ratio) has *most likely*:

    A. Improved.

    B. Weakened.

    C. Remained the same.

30. Magma Corporation's debt-to-capital ratio for 2009 is *closest to*:

    A. 0.38

    B. 0.62

    C. 0.26

31. Magma Corporation's debt-to-equity ratio for 2009 is *closest to*:

    A. 0.38

    B. 0.35

    C. 0.62

32. Magma Corporation's financial leverage ratio for 2009 is *closest to*:

    A. 1.68

    B. 1.39

    C. 1.54

33. Magma Corporation's interest coverage ratio for 2008 is *closest to*:

    A. 3.15 times.

    B. 31.75 times.

    C. 25.76 times.

34. Over 2009, Magma Corporation's ability to service its debt obligations

(as measured by its interest coverage ratio) has *most likely*:

A. Improved.

B. Weakened.

C. Remained the same.

35. Magma Corporation's fixed charge coverage ratio for 2009 is *closest to*:

A. 4.23

B. 3.91

C. 4.79

36. Magma Corporation's gross profit margin for 2008 is *closest to*:

A. 22.31%

B. 46.29%

C. 53.69%

37. Magma Corporation's operating profit margin for 2008 is *closest to*:

A. 20.72%

B. 22.31%

C. 22.64%

38. Magma Corporation's pre-tax margin for 2008 is *closest to*:

A. 20.91%

B. 22.64%

C. 20.72%

39. Magma Corporation's net profit margin for 2009 is *closest to*:

A. 12.74%

B. 20.91%

C. 14.66%

40. Magma Corporation's return on assets for 2009 is *closest to*:

A. 16.60%

B. 14.79%

C. 18.81%

41. Magma Corporation's adjusted return on assets for 2009 is *closest to*:

A. 17.00%

B. 17.30%

C. 17.60%

42. Magma Corporation's operating return on assets for 2009 is *closest to*:

A. 20.91%

B. 26.60%

C. 23.41%

43. Magma Corporation's return on total capital for 2008 is *closest to*:

A. 18.88%

B. 19.46%

C. 21.64%

44. Magma Corporation's return on equity for 2009 is *closest to*:

A. 25.45%

B. 24.78%

C. 26.17%

45. Magma Corporation's return on common equity for 2009 is *closest to*:

A. 46.4%

B. 21.91%

C. 53.9%

46. The following information relates to Alpha Inc.:

Opening inventory = $47,000

Ending inventory = $28,000

Sales = $77,000

Cost of goods sold = $54,000

The amount of purchases made by the company is *closest to*:

A. $35,000

B. $19,000

C. $23,000

47. The following information relates to Gamma Corporation:

Payables turnover = 8

Average trade payables = $11,000

Sales = $95,000

Cost of goods sold = $74,000

Opening inventory = $32,000

The company's ending inventory is *closest to*:

A. $88,000

B. $42,000

C. $46,000

48. The following information relates to Rose Inc.:

Net profit margin = 15.7%

Return on assets = 20.57%

Financial leverage = 1.42

Asset turnover = 1.31

Rose Inc.'s return on equity is *closest to*:

A. 29.21%

B. 4.59%

C. 6.00%

49. The following information relates to Blue Inc.:

Revenue = $442,200

Cost of goods sold = $239,100

Net income = $53,100

Total assets at the beginning of the period = $544,000

Total assets at the end of the period = $775,000

Financial leverage ratio = 0.55

Blue Inc.'s return on equity for the period is *closest to*:

A. 3.77%

B. 5.37%

C. 4.43%

50. The following information relates to JK Associates:

Tax burden ratio = 0.74

Interest burden ratio = 1.01

EBIT margin = 0.24

Asset turnover = 1.23

Financial leverage = 1.57

JK Associates' ROE is *closest to*:

A. 46.35%

B. 34.64%

C. 46.81%

51. The following information relates to MT Technologies:

Revenue = $997,000

Cost of goods sold = $339,000

Other expenses = $235,000

Interest expense = $42,000

Tax expense = $27,000

Asset turnover = 1.13

Financial leverage = 1.44

MT Technologies' return on equity is *closest to*:

A. 57.78%

B. 62.18%

C. 64.63%

52. The following information relates to Fly High Corporation:

Revenue = $17 million

Cost of goods sold = $5.5 million

Other expenses = $4.2 million

Interest expense = $2.4 million

Tax expense = $3.3 million

Asset turnover = 1.24

Total shareholders' equity at the beginning of the period = $30 million

Assuming that shareholders' equity remains the same during the period, Fly High's ROE for the period is *closest to*:

A. 5.50%

B. 5.33%

C. 6.33%

Reading 28: Financial Analysis Techniques

1. Which of the following is *most likely* to be used to conduct trend analysis?

   A. Horizontal common-size financial statements

   B. Vertical common-size financial statements

   C. Pie charts

   Answer: A

   Horizontal common-size financial statements are prepared to look for trends over time in evaluating a company's past performance and preparing forecasts.

2. Which of the following is *least likely* a limitation of ratio analysis?

   A. Companies may have several divisions that operate in different industries.

   B. Most companies around the world subscribe to the same set of accounting standards.

   C. There are no specified ranges within which particular ratios for companies must lie.

   Answer: B

   Despite the growing convergence between IFRS and U.S. GAAP, significant differences remain across the two sets of standards, which makes comparison across firms difficult.

3. Which of the following classifications of ratios is *most likely* to be used to evaluate a firm's ability to meet its long-term debt obligations?

   A. Liquidity ratios

   B. Solvency ratios

   C. Activity ratios

   Answer: B

   Solvency ratios measure a company's ability to meet its long-term debt obligations.

4. Which of the following classifications of ratios is *least likely* to be used to evaluate a firm's operating efficiency?

   A. Profitability ratios

   B. Solvency ratios

   C. Activity ratios

   Answer: B

   Solvency ratios measure a company's ability to meet its long-term debt obligations. They do not play a major role in evaluating the operating efficiency of a business.

5. Which of the following is *most likely* to indicate that a company has too many resources tied up in inventory?

   A. A relatively high inventory turnover ratio

   B. A relatively high number of days of inventory on hand

   C. A relatively low net operating cycle

   Answer: B

   A relatively high number of days of inventory on hand implies a low inventory turnover ratio, which suggests that the company has too much inventory on hand.

6. Which of the following is *most likely* to suggest that a company's low receivables turnover is due to credit management issues?

   A. A lower sales growth than competitors

   B. A higher sales growth than competitors

   C. A history of higher bad debts than competitors

   Answer: C

   A low receivables turnover ratio suggests that the company has problems collecting money on time from customers. This will most likely be indicated by high bad debts and credit losses compared to competitors.

7. Consider the following statements:

Statement 1: The number of days of sales outstanding is inversely related to revenue.

Statement 2: The number of days of inventory is directly related to average inventory.

Which of the following is *most likely*?

A. Both statements are correct.

B. Both statement are incorrect.

C. One of the statements is incorrect.

Answer: A

Both statements are indeed accurate.

8. A company's balance sheet indicates that it has sufficient cash and short-term investments. However, its payables turnover ratio remains low. This *most likely* suggests that:

   A. The company has a liquidity crisis.

   B. The company's suppliers offer it lenient credit terms.

   C. The company has excellent receivables collection policies.

   Answer: B

   If the company has sufficient liquid assets and still has a low payables turnover ratio, its suppliers are probably offering lenient credit and collection terms.

9. A higher working capital turnover *most likely* indicates:

   A. Higher operating efficiency.

   B. Poor liquidity management.

   C. Lower operating efficiency.

   Answer: A

   A higher working capital turnover ratio indicates that the company is utilizing its working capital efficiently to generate revenue.

10. Which of the following companies is *least likely* to report a low fixed asset turnover ratio?

A. A mature company operating in a labor-intensive business environment

B. A company that is just starting out

C. A company that is struggling to make sales due to high prices

Answer: A

A company operating in a labor-intensive business environment will likely have a low investment in fixed assets and consequently, a higher fixed-asset turnover ratio.

11. An increase in which of the following will *most likely* result in a decrease in a company's cash conversion cycle?

A. Number of days of payables

B. Number of days of inventory

C. Number of days of receivables

Answer: A

Cash conversion cycle = DSO + DOH – Days of payables.

12. An increase in which of the following ratios *most likely* suggests an improvement in a company's solvency position?

A. Debt-to-equity ratio

B. Financial leverage ratio

C. Fixed charge coverage ratio

Answer: C

An increase in the D-E and the financial leverage ratio indicates a **worsening** solvency position. An increase in the fixed charge coverage ratio suggests that the company can service its debt obligations more comfortably with operating earnings.

13. Which of the following is *least likely* a financial sector ratio?

A. Capital adequacy

B. Net interest margin

C. Same store sales

Answer: C

"Same store sales" is a ratio that is used for analysis of retailers.

The following financial statements relate to Magma Corporation:

INCOME STATEMENT:

	2008 ($ '000)	**2009 ($ '000)**
Total revenue	242,500	367,700
Cost of goods sold	(112,300)	(197,500)
Gross profit	**130,200**	**170,200**
Depreciation	(12,900)	(16,800)
Salaries and wages	(7,700)	(8,100)
Electricity	(11,100)	(13,500)
Administrative expenses	(13,200)	(16,300)
Marketing	(17,200)	(22,200)
Operating lease payments	(14,000)	(17,100)
Operating income	**54,100**	**76,200**
Interest income	2,900	3,100
Interest expense	(2,100)	(2,400)
Income before taxes	**54,900**	**76,900**
Provision for income taxes	(24,000)	(23,000)
Net income	**30,900**	**53,900**

BALANCE SHEET:

	2008 ($ '000)	**2009 ($ '000)**

Assets		
Long-term Assets		
Property, plant, and equipment	105,700	153,700
Investment in associates	68,600	80,600
Goodwill	47,100	54,100
Other long-term assets	38,500	44,500
Total Long-term Assets	**259,900**	**332,900**
Current Assets		
Inventory	4,900	6,200
Accounts receivable	5,300	7,500
Short-term marketable securities	6,200	8,300
Prepaid expenses	4,700	4,500
Cash	5,500	5,100
Total Current Assets	**26,600**	**31,600**
Total Assets	**286,500**	**364,500**
Shareholders' Equity and Liabilities		
Shareholders' Equity		
Common stock	100,000	100,000
10% Preferred stock	75,000	75,000
Retained earnings	31,000	42,500
Total Shareholders' Equity	**206,000**	**217,500**
Liabilities		
Long-term debt	72,000	134,700

Current Liabilities		
Accounts payable	4,700	6,700
Accrued expenses	3,800	5,600
Total Current Liabilities	**8,500**	**12,300**
Total Shareholders' Equity and Liabilities	**286,500**	**364,500**

Using the above information and assuming a tax rate of 40%, answer Questions 14 to 45:

14. Magma Corporation's inventory turnover for 2009 is *closest to*:

    A. 31.85

    B. 10.26

    C. 35.59

    Answer: C

    Inventory turnover = Cost of goods sold / Average inventory

    Inventory turnover = 197,500 / [(4,900 + 6,200)/2] = 35.586

15. Magma Corporation's number of days of inventory on hand for 2009 is *closest to*:

    A. 10.26 days.

    B. 11.46 days.

    C. 35.58 days.

    Answer: A

    Days of inventory on hand = 365 / Inventory turnover

    Days of inventory on hand = 365 / 35.586 = 10.257

16. Magma Corporation's receivables turnover for 2009 is *closest to*:

    A. 49.03

    B. 69.38

C. 57.45

Answer: C

Receivables turnover = Revenue / Average receivables

Receivables turnover = 367,700 / [(5,300 + 7,500)/2] = 57.453

17. Magma Corporation's number of days of sales outstanding for 2009 is *closest to*:

A. 7.44 days

B. 6.35 days

C. 5.26 days

Answer: B

Days of sales outstanding = 365 / Receivables turnover

Days of sales outstanding = 365 / 57.453 = 6.353

18. Magma Corporation's payables turnover for 2009 is *closest to*:

A. 34.65

B. 34.88

C. 29.67

Answer: B

Payables turnover = Purchases / Average trade payables

Purchases = Ending inventory + Cost of goods sold – Opening inventory

Purchases = 6,200 + 197,500 – 4,900 = 198,800

Payables turnover = 198,800 / [(4,700 + 6,700)/2] = 34.877

19. Magma Corporation's number of days of payables for 2009 is *closest to*:

A. 10.53 days.

B. 12.30 days.

C. 10.47 days.

Answer: C

Number of days of payables = 365 / Payables turnover

Number of days of payables = 365 / 34.877 = 10.465

20. Magma Corporation's working capital turnover for 2009 is *closest to*:

    A. 19.66

    B. 19.05

    C. 20.31

    Answer: A

    Working capital turnover = Revenue / Average working capital

    Working capital for 2008 = 26,600 – 8,500 = 18,100

    Working capital for 2009 = 31,600 – 12,300 = 19,300

    Average working capital = (18,100 + 19,300) / 2 = 18,700

    Working capital turnover = 367,700 / 18,700 = 19.663

21. Magma Corporation's fixed asset turnover for 2009 is *closest to*:

    A. 1.10

    B. 1.24

    C. 1.41

    Answer: B

    Fixed asset turnover = Revenue / Average fixed assets

    Fixed asset turnover = 367,700 / [(259,900 + 332,900)/2] = 1.241

22. Magma Corporation's total asset turnover for 2009 is *closest to*:

    A. 1.13

    B. 1.00

    C. 1.28

    Answer: A

    Total asset turnover = Revenue / Average total assets

    Total asset turnover = 367,700 / [(286,500 + 364,500)/2] = 1.13

23. Magma Corporation's current ratio for 2008 is *closest to*:

A. 2.57

B. 2.48

C. 3.13

Answer: C

Current ratio = Current assets / Current liabilities

Current ratio = 26,600 / 8,500 = 3.129

24. Magma Corporation's quick ratio for 2008 is *closest to*:

A. 1.38

B. 2.00

C. 1.70

Answer: B

Quick ratio = (Cash + Short-term marketable securities + Receivables) / Current liabilities

Quick ratio = (5,500 + 6,200 + 5,300) / 8,500 = 2

25. Magma Corporation's cash ratio for 2009 is *closest to*:

A. 1.09

B. 1.38

C. 1.70

Answer: A

Cash ratio = (Cash + Short-term marketable securities) / Current liabilities

Cash ratio = (5,100 + 8,300) / 12,300 = 1.089

26. Magma Corporation's liquidity position over 2009 (as measured by its current ratio) has *most likely*:

A. Improved.

B. Worsened.

C. Remained the same.

Answer: B

Current ratio = Current assets / Current liabilities

Current ratio in 2009 = 31,600 / 12,300 = 2.569

The company's liquidity position has worsened over 2009.

27. Magma Corporation's cash conversion cycle for 2009 is *closest to*:

A. 27.08 days.

B. 6.15 days.

C. 16.61 days.

Answer: B

Cash conversion cycle = Days of sales outstanding + Days of inventory on hand – Number of days of payables

Cash conversion cycle = 6.353 + 10.257 – 10.465 = 6.145

28. Magma Corporation's debt-to-assets ratio for 2008 is *closest to*:

A. 0.37

B. 0.28

C. 0.25

Answer: C

Debt-to-assets ratio = Total debt / Total assets

Debt-to-assets ratio = 72,000 / 286,500 = 0.251

29. Magma Corporation's solvency position over 2009 (as measured by its debt-to-assets ratio) has *most likely*:

A. Improved.

B. Weakened.

C. Remained the same.

Answer: B

Debt-to-assets ratio in 2009 = 134,700 / 364,500 = 0.37

The company's debt-to-assets ratio has increased from 0.251, which indicates that the company's solvency position has weakened.

30. Magma Corporation's debt-to-capital ratio for 2009 is *closest to*:

A. 0.38

B. 0.62

C. 0.26

Answer: A

Debt-to-capital = Total debt / (Total debt + Shareholders' equity)

Debt-to-capital = 134,700 / (134,700 + 217,500) = 0.382

31. Magma Corporation's debt-to-equity ratio for 2009 is *closest to*:

A. 0.38

B. 0.35

C. 0.62

Answer: C

Debt-to-equity = Total debt / Shareholders' equity

Debt-to-equity = 134,700 / 217,500 = 0.619

32. Magma Corporation's financial leverage ratio for 2009 is *closest to*:

A. 1.68

B. 1.39

C. 1.54

Answer: C

Financial leverage = Average total assets / Average total equity

Financial leverage = [(286,500 + 364,500)/2] / [(206,000 + 217,500)/2] = 1.537

33. Magma Corporation's interest coverage ratio for 2008 is *closest to*:

A. 3.15 times.

B. 31.75 times.

C. 25.76 times.

Answer: C

Interest coverage ratio = EBIT / Interest payments

Interest coverage ratio = 54,100 / 2,100 = 25.76 times

34. Over 2009, Magma Corporation's ability to service its debt obligations (as measured by its interest coverage ratio) has *most likely*:

    A. Improved.

    B. Weakened.

    C. Remained the same.

    Answer: A

    Interest coverage ratio in 2009 = 76,200 / 2,400 = 31.75 times

    A higher ratio implies that the company can service its debt from operating earnings more comfortably.

35. Magma Corporation's fixed charge coverage ratio for 2009 is *closest to*:

    A. 4.23

    B. 3.91

    C. 4.79

    Answer: C

    Fixed charge coverage ratio = (EBIT + Lease payments) / (Interest + Lease payments)

    Fixed charge coverage ratio = (76,200 + 17,100) / (2,400 + 17,100) = 4.785

36. Magma Corporation's gross profit margin for 2008 is *closest to*:

    A. 22.31%

    B. 46.29%

    C. 53.69%

    Answer: C

    Gross profit margin = Gross profit / Revenue

    Gross profit margin = (130,200 / 242,500) × 100 = 53.69%

37. Magma Corporation's operating profit margin for 2008 is *closest to*:

A. 20.72%

B. 22.31%

C. 22.64%

Answer: B

Operating profit margin = Operating profit / Revenue

Operating profit margin = (54,100 / 242,500) × 100 = 22.309%

38. Magma Corporation's pre-tax margin for 2008 is *closest to*:

A. 20.91%

B. 22.64%

C. 20.72%

Answer: B

Pre-tax margin = EBT / Revenue

Pre-tax margin = (54,900 / 242,500) × 100 = 22.639%

39. Magma Corporation's net profit margin for 2009 is *closest to*:

A. 12.74%

B. 20.91%

C. 14.66%

Answer: C

Net profit margin = Net profit / Revenue

Net profit margin = (53,900 / 367,700) × 100 = 14.659%

40. Magma Corporation's return on assets for 2009 is *closest to*:

A. 16.60%

B. 14.79%

C. 18.81%

Answer: A

Return on assets = Net income / Average total assets

Return on assets = 53,900 / [(286,500 + 364,500)/2] = 16.559%

41. Magma Corporation's adjusted return on assets for 2009 is *closest to*:

A. 17.00%

B. 17.30%

C. 17.60%

Answer: A

Adjusted return on assets = [Net income + Interest expense (1 – Tax rate)] / Average total assets

Adjusted return on assets = [53,900 + 2,400 (1 – 0.4)] / [(286,500 + 364,500)/2]

Adjusted return on assets = 17.00%

42. Magma Corporation's operating return on assets for 2009 is *closest to*:

A. 20.91%

B. 26.60%

C. 23.41%

Answer: C

Operating return on assets = EBIT / Average total assets

Operating return on assets = 76,200 / [(286,500 + 364,500)/2] = 23.41%

43. Magma Corporation's return on total capital for 2008 is *closest to*:

A. 18.88%

B. 19.46%

C. 21.64%

Answer: B

Return on total capital = EBIT / (Short-term debt + Long-term debt + Equity)

Return on total capital = 54,100 / (72,000 + 206,000) = 19.46%

Magma Corporation does not have any short-term debt outstanding.

44. Magma Corporation's return on equity for 2009 is *closest to*:

A. 25.45%

B. 24.78%

C. 26.17%

Answer: A

Return on equity = Net income / Average total equity

Return on equity = {53,900 / [(206,000 + 217,500)/2]} × 100 = 25.45%

45. Magma Corporation's return on common equity for 2009 is *closest to*:

A. 46.4%

B. 21.91%

C. 53.9%

Answer: A

Return on common equity = (Net income – Preferred dividends) / Average common equity

Return on common equity = {(53,900 – 7,500) / [(100,000 + 100,000)/2]} × 100 = 46.4%

46. The following information relates to Alpha Inc.:

Opening inventory = $47,000

Ending inventory = $28,000

Sales = $77,000

Cost of goods sold = $54,000

The amount of purchases made by the company is *closest to*:

A. $35,000

B. $19,000

C. $23,000

Answer: A

Purchases = Ending inventory + COGS – Opening inventory

Purchases = 28,000 + 54,000 – 47,000 = $35,000

47. The following information relates to Gamma Corporation:

Payables turnover = 8

Average trade payables = $11,000

Sales = $95,000

Cost of goods sold = $74,000

Opening inventory = $32,000

The company's ending inventory is *closest to*:

A. $88,000

B. $42,000

C. $46,000

Answer: C

Ending inventory = Opening inventory + Purchases – Cost of goods sold

Purchases = Payables turnover × Average trade payables

Purchases = 8 × 11,000 = 88,000

Therefore, ending inventory = 32,000 + 88,000 – 74,000 = $46,000

48. The following information relates to Rose Inc.:

Net profit margin = 15.7%

Return on assets = 20.57%

Financial leverage = 1.42

Asset turnover = 1.31

Rose Inc.'s return on equity is *closest to*:

A. 29.21%

B. 4.59%

C. 6.00%

Answer: A

ROE = Net profit margin × Asset turnover × Financial leverage

ROE = 15.7% × 1.31 × 1.42 = 29.21%

49. The following information relates to Blue Inc.:

Revenue = $442,200

Cost of goods sold = $239,100

Net income = $53,100

Total assets at the beginning of the period = $544,000

Total assets at the end of the period = $775,000

Financial leverage ratio = 0.55

Blue Inc.'s return on equity for the period is *closest to*:

A. 3.77%

B. 5.37%

C. 4.43%

Answer: C

Return on equity = (Net income / Average total assets) × (Average total assets/Average shareholders' equity)

Return on equity = (53,100 / 659,500) × 0.55

Return on equity = 4.43%

50. The following information relates to JK Associates:

Tax burden ratio = 0.74

Interest burden ratio = 1.01

EBIT margin = 0.24

Asset turnover = 1.23

Financial leverage = 1.57

JK Associates' ROE is *closest to*:

A. 46.35%

B. 34.64%

C. 46.81%

Answer: B

ROE = Tax burden × Interest burden × EBIT margin × Asset turnover × Financial leverage

ROE = 0.74 × 1.01 × 0.24 × 1.23 × 1.57 = 34.64%

51. The following information relates to MT Technologies:

Revenue = $997,000

Cost of goods sold = $339,000

Other expenses = $235,000

Interest expense = $42,000

Tax expense = $27,000

Asset turnover = 1.13

Financial leverage = 1.44

MT Technologies' return on equity is *closest to*:

A. 57.78%

B. 62.18%

C. 64.63%

Answer: A

ROE = (Net income / Revenue) × Asset turnover × Financial leverage

Net income = 997,000 – 339,000 – 235,000 – 42,000 – 27,000 = $354,000

ROE = (354,000 / 997,000) × 1.13 × 1.44 = 57.78%

52. The following information relates to Fly High Corporation:

Revenue = $17 million

Cost of goods sold = $5.5 million

Other expenses = $4.2 million

Interest expense = $2.4 million

Tax expense = $3.3 million

Asset turnover = 1.24

Total shareholders' equity at the beginning of the period = $30 million

Assuming that shareholders' equity remains the same during the period, Fly High's ROE for the period is *closest to*:

A. 5.50%

B. 5.33%

C. 6.33%

Answer: B

Average total assets = Revenue / Asset turnover

Average total assets = 17,000,000 / 1.24 = $13,709,677.42

Therefore, financial leverage = 13,709,677.42 / 30,000,000 = 0.45699

Net income = 17 – 5.5 – 4.2 – 2.4 – 3.3 = $1.6 million

ROE = (1,600,000 / 17,000,000) × 1.24 × 0.45699 = 5.33%

Reading 29: Inventories

1. Which of the following items is *least likely* a capitalized inventory cost?

   A. Costs of purchase

   B. Costs of conversion

   C. Administrative expenses

2. Which of the following items is *most likely* an inventory-related cost that is expensed as incurred?

   A. Cost of raw materials

   B. Normal costs of material wastage

   C. Selling and marketing expenses

3. XYZ Corp is a mining company. During the year 2008, it wrote down its inventory by $20,500 to $400,000. In 2009, the fair value of its inventory rose to $450,000. The value of inventory recognized by XYZ at the end of 2009 under IFRS and U.S. GAAP is *closest to:*

	IFRS		U.S. GAAP
A.	$420,500		$400,000
B.	$450,000		$450,000
C.	$450,000		$420,500

4. Given stable inventory quantities and rising prices, use of LIFO will *most likely*:

   A. Overstate net income.

   B. Understate net income.

   C. Understate inventory.

5. Given stable inventory quantities and falling prices, use of LIFO will *least likely*:

   A. Result in higher net income compared to FIFO.

B. Overstate net income.

C. Overstate inventory.

6. Given stable inventory quantities and falling prices, use of FIFO will *most likely:*

   A. Understate replacement costs.

   B. Understate profits.

   C. Understate inventory.

7. Which of the following ratios is *least likely* to be used to evaluate a company's inventory management?

   A. Inventory turnover

   B. Quick ratio

   C. Number of days of inventory on hand

8. In a period of falling prices and stable inventory quantities, which of the following is *most likely*?

   A. LIFO COGS > FIFO COGS

   B. LIFO CF < FIFO CF

   C. LIFO EI < FIFO EI

9. In a period of rising prices and stable inventory quantities, which of the following is *most likely*?

   A. Profitability ratios are lower under FIFO.

   B. Solvency ratios are higher under FIFO.

   C. Activity ratios are lower under FIFO.

10. In a period of falling prices and stable inventory quantities, which of the following is *least likely*?

    A. The current ratio is higher under LIFO.

    B. Solvency ratios are higher under LIFO.

    C. The inventory turnover ratio is lower under LIFO.

11. Sun Corporation is a manufacturer of a single product. The following information relates to its production levels and costs for 2009:

Number of units produced = 7.5 million

Cost of raw materials = $24 million

Direct labor conversion costs = $52 million

Production overheads = $18 million

Freight-in charges = $3.4 million

Storage costs of finished goods = $980,000

Abnormal wastage = $37,000

Given that there is no work-in-progress inventory at the end of the year, the company's capitalized cost per unit of inventory is *closest to*:

A. $97.40

B. $13.12

C. $12.99

12. JK Enterprises' balance sheet reported inventory amounting to $32,300. The company suspects that it will only be able to sell this inventory at its reported value and will have to incur further selling expenses of $2,200. Assuming that the company follows IFRS, which of the following statements is *least accurate*?

    A. JK Enterprises should value its inventory at $32,300.

    B. JK Enterprises should value its inventory at $30,100.

    C. JK Enterprises should recognize a loss of $2,200.

13. Blue Water Inc. purchased inventory for $57,000. Due to an unfavorable economic outlook, the company decides to immediately liquidate its stock of inventory. It estimates that the stock will only sell for $52,700 and the company will have to bear further expenses of $3,500 in the process. Assuming that the company follows IFRS, the value of inventory that Blue Water should record on its balance sheet is *closest to*:

    A. $57,000

    B. $52,700

    C. $49,200

14. The following information relates to Royal Manufacturers:

Cost of inventory = $54,000

Estimated selling price = $72,000

Estimated selling costs = $15,000

Replacement cost = $52,000

Normal profit margin = $7,000

Assuming that the company follows U.S. GAAP, the value of inventory that it should record on its balance sheet is *closest to*:

A. $54,000

B. $39,000

C. $52,000

15. Pluto Corporation purchased inventory for $101,100. The company plans to sell it at $103,300, but estimates that it will incur selling costs of $3,300. The company also estimates that the replacement cost of its inventory is $95,000. Assuming a normal profit margin of $4,000 and that the company follows U.S. GAAP, the value of inventory it should report on its balance sheet is *closest to*:

A. $95,000

B. $96,000

C. $97,800

16. The following information relates to Esther Corporation:

Cost of inventory = $212,212

Estimated selling price = $221,221

Estimated selling costs = $9,100

Replacement cost = $212,200

Normal profit margin = $200

Esther Corporation's inventory under IFRS and U.S. GAAP is *closest to*:

	IFRS ($)	**U.S. GAAP ($)**

A	211,921	212,200
B	212,121	212,121
C	212,212	211,921

17. The following information relates to Jupiter Inc.:

    Cost of inventory = $155,000

    Estimated selling price = $205,000

    Estimated selling costs = $35,000

    Replacement cost = $165,000

    Normal profit margin = $10,000

    Assuming that the company follows U.S. GAAP, the amount of inventory it should report on its balance sheet is *closest to*:

    A. $165,000

    B. $155,000

    C. $120,000

Use the following information regarding Tiara Corp. to answer Questions 18 to 20:

Quarter	**Units Held/Purchased**	**Unit Cost ($)**	**Total Cost ($)**
Opening Inventory	15	30	450
1	15	30	450
2	12	35	420
3	20	25	500
4	30	20	600
Total	**92**		**2,420**

Given that Tiara sold 10, 12, 15, and 20 units in the four quarters respectively, answer the following questions:

18. Ending inventory if the company uses LIFO cost flow assumption is

closest to:

A. $725

B. $834

C. $1,075

19. Cost of goods sold if the company uses FIFO cost flow assumption is *closest to*:

A. $1,695

B. $1,586

C. $1,345

20. Ending inventory if the company uses the weighted average cost flow assumption is *closest to*:

A. $921

B. $725

C. $1,075

Use the following information relating to Magna Corp. to answer Questions 21 to 28:

Quarter	**Units Held/Purchased**	**Unit Cost ($)**	**Total Cost ($)**
Opening Inventory	15	24	360
1	25	15	375
2	22	18	396
3	18	20	360
4	20	22	440
Total	**100**		**1,931**

Given that Magna sold 12, 24, 24, and 26 units in the four quarters respectively, answer the following questions:

21. Given that the company uses FIFO, ending inventory under the periodic system is *closest to*:

A. $336

B. $308

C. $447

22. Given that the company uses LIFO cost flow assumption, cost of goods sold under the periodic system is *closest to*:

    A. $1,595

    B. $1,623

    C. $1,535

23. Consider the following statements:

    Statement 1: Given that the company uses the perpetual system, it would report lower cost of goods sold under the LIFO cost flow assumption for the first quarter than it would under the FIFO cost flow assumption.

    Statement 2: Given that the company uses the periodic system, it would report lower ending inventory under the FIFO cost flow assumption than it would under the LIFO cost flow assumption.

    Which of the following is *most accurate*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

24. Given that the company uses FIFO, cost of goods sold for the second quarter under the perpetual system is *closest to*:

    A. $387

    B. $426

    C. $288

25. Given that the company uses FIFO, ending inventory for the third quarter under the perpetual system is *closest to*:

    A. $435

    B. $456

C. $396

26. Given that the company uses LIFO, ending inventory for the second quarter under the perpetual system is *closest to*:

    A. $555

    B. $525

    C. $456

27. Given that the company uses LIFO, cost of goods sold for the third quarter under the perpetual system is *closest to*:

    A. $420

    B. $450

    C. $426

28. Given that the company uses the perpetual system and FIFO, which of the following statements is *most accurate*?

    The company would report:

    A. Higher cost of goods sold in the fourth quarter than it would report under the LIFO cost flow assumption.

    B. Higher ending inventory in the fourth quarter than it would report under the LIFO cost flow assumption.

    C. Higher cost of goods sold for the year than it would report under the LIFO cost flow assumption.

Use the following information regarding Mercury Inc. to answer Questions 29 to 33:

Quarter	Units Held/Purchased	Unit Cost ($)	Total Cost ($)
Opening Inventory	17	28	476
1	20	24	480
2	18	26	468
3	25	20	500

4	20	23	460
Total	**100**		**2,384**

Given that the company uses LIFO cost flow assumption and sells 22, 16, 26, and 14 units in the four quarters respectively, answer the following questions:

29. Cost of goods sold under the periodic system is *closest to*:

    A. $1,788

    B. $1,884

    C. $1,800

30. Ending inventory under the periodic system is *closest to*:

    A. $500

    B. $584

    C. $596

31. Ending inventory for the second quarter under the perpetual system is *closest to*:

    A. $584

    B. $420

    C. $472

32. Cost of goods sold for the third quarter under the perpetual system is *closest to*:

    A. $536

    B. $526

    C. $446

33. Which of the following statements regarding Mercury Inc. is *most accurate*?

    A. It would report higher cost of goods sold for the year under the perpetual system than it would under the periodic system.

    B. It would report higher ending inventory for the year under the perpetual system than it would under the periodic system.

C. It would report the same cost of goods sold for the year under both the perpetual and the periodic systems.

34. IFRS requires companies to make all of the following disclosures relating to inventory *except*:

A. The carrying amount of inventories pledged as collateral for liabilities.

B. Significant estimates applicable to inventories.

C. Amount of inventory-related expenses for the period.

Reading 29: Inventories

1. Which of the following items is *least likely* a capitalized inventory cost?

   A. Costs of purchase

   B. Costs of conversion

   C. Administrative expenses

   Answer: C

   Administrative expenses are not capitalized inventory costs. They are expensed on the income statement as incurred.

2. Which of the following items is *most likely* an inventory-related cost that is expensed as incurred?

   A. Cost of raw materials

   B. Normal costs of material wastage

   C. Selling and marketing expenses

   Answer: C

   Selling and marketing costs are expensed as incurred.

3. XYZ Corp is a mining company. During the year 2008, it wrote down its inventory by $20,500 to $400,000. In 2009, the fair value of its inventory rose to $450,000. The value of inventory recognized by XYZ at the end of 2009 under IFRS and U.S. GAAP is *closest to:*

	IFRS	U.S. GAAP
A.	$420,500	$400,000
B.	$450,000	$450,000
C.	$450,000	$420,500

   Answer: B

   Companies that are engaged in agriculture, forest products, and mining are allowed to value inventory at NRV even if it exceeds historical cost under IFRS and U.S. GAAP. Therefore, the company will write-up its inventory in 2009 to $450,000.

4. Given stable inventory quantities and rising prices, use of LIFO will *most likely*:

   A. Overstate net income.

   B. Understate net income.

   C. Understate inventory.

   Answer: C

   Given stable inventory quantities and rising prices, use of LIFO will understate inventory. COGS and net income will be valued properly by using LIFO.

5. Given stable inventory quantities and falling prices, use of LIFO will *least likely*:

   A. Result in higher net income compared to FIFO.

   B. Overstate net income.

   C. Overstate inventory.

   Answer: B

   Given stable inventory quantities and falling prices, use of LIFO will not overstate net income. Current replacement costs will be reflected in COGS, which would result in an accurate value for net income.

6. Given stable inventory quantities and falling prices, use of FIFO will *most likely:*

   A. Understate replacement costs.

   B. Understate profits.

   C. Understate inventory.

   Answer: B

   Inventory will be appropriately valued if FIFO is used (regardless of whether prices are rising or falling). Replacement costs will be overstated in COGS and profits will be understated.

7. Which of the following ratios is *least likely* to be used to evaluate a

company's inventory management?

A. Inventory turnover

B. Quick ratio

C. Number of days of inventory on hand

Answer: B

The quick ratio ignores the company's inventory levels. It is used to measure a company's liquidity management, not its inventory management.

8. In a period of falling prices and stable inventory quantities, which of the following is *most likely*?

A. LIFO COGS > FIFO COGS

B. LIFO CF < FIFO CF

C. LIFO EI < FIFO EI

Answer: B

In a period of falling prices and stable inventory quantities, use of LIFO results in lower COGS, higher NI, and higher taxes. Therefore, CF under LIFO is lower.

9. In a period of rising prices and stable inventory quantities, which of the following is *most likely*?

A. Profitability ratios are lower under FIFO.

B. Solvency ratios are higher under FIFO.

C. Activity ratios are lower under FIFO.

Answer: C

In a period of rising prices and stable inventory quantities, use of FIFO results in lower activity ratios, lower solvency ratios, and higher profitability ratios.

10. In a period of falling prices and stable inventory quantities, which of the following is *least likely*?

A. The current ratio is higher under LIFO.

B. Solvency ratios are higher under LIFO.

C. The inventory turnover ratio is lower under LIFO.

Answer: B

In a period of falling prices and stable inventory quantities, use of LIFO results in lower COGS, higher net income, higher equity, and, therefore, lower solvency ratios.

11. Sun Corporation is a manufacturer of a single product. The following information relates to its production levels and costs for 2009:

    Number of units produced = 7.5 million

    Cost of raw materials = $24 million

    Direct labor conversion costs = $52 million

    Production overheads = $18 million

    Freight-in charges = $3.4 million

    Storage costs of finished goods = $980,000

    Abnormal wastage = $37,000

    Given that there is no work-in-progress inventory at the end of the year, the company's capitalized cost per unit of inventory is *closest to*:

    A. $97.40

    B. $13.12

    C. $12.99

    Answer: C

    Total capitalized costs = 24 + 52 + 18 + 3.4 = $97.4 million

    Storage costs of finished goods are not capitalized inventory costs.

    Therefore, capitalized cost per unit = 97.4 / 7.5 = $12.99

12. JK Enterprises' balance sheet reported inventory amounting to $32,300. The company suspects that it will only be able to sell this inventory at its reported value and will have to incur further selling expenses of $2,200. Assuming that the company follows IFRS, which of the following statements is *least accurate*?

A. JK Enterprises should value its inventory at $32,300.

B. JK Enterprises should value its inventory at $30,100.

C. JK Enterprises should recognize a loss of $2,200.

Answer: A

Under IFRS, inventory is reported at the lower of cost or net realizable value.

Net realizable value = 32,300 – 2,200 = $30,100

Therefore, the company should write-down its inventory to $30,100 and recognize a loss of $2,200.

13. Blue Water Inc. purchased inventory for $57,000. Due to an unfavorable economic outlook, the company decides to immediately liquidate its stock of inventory. It estimates that the stock will only sell for $52,700 and the company will have to bear further expenses of $3,500 in the process. Assuming that the company follows IFRS, the value of inventory that Blue Water should record on its balance sheet is *closest to*:

    A. $57,000

    B. $52,700

    C. $49,200

    Answer: C

    Under IFRS, inventory is reported at the lower of cost or net realizable value.

    Net realizable value = Selling price – Selling costs

    Net realizable value = 52,700 – 3,500 = $49,200

    Net realizable value ($49,200) is lower than the cost of inventory ($57,000). Therefore, inventory must be written down to $49,200.

14. The following information relates to Royal Manufacturers:

    Cost of inventory = $54,000

    Estimated selling price = $72,000

    Estimated selling costs = $15,000

Replacement cost = $52,000

Normal profit margin = $7,000

Assuming that the company follows U.S. GAAP, the value of inventory that it should record on its balance sheet is *closest to*:

A. $54,000

B. $39,000

C. $52,000

Answer: C

Under U.S. GAAP, inventory is measured at the lower of cost or market value. Market value is defined as replacement cost, where replacement cost must lie within a range of values between NRV minus normal profit margin and NRV.

Net realizable value = 72,000 – 15,000 = $57,000

Net realizable value – Normal profit margin = 57,000 – 7,000 = $50,000

The replacement cost of $52,000 lies within the specified range of $50,000 and $57,000.

As the replacement cost of $52,000 is less than the original cost of $54,000, inventory will be reported at $52,000.

15. Pluto Corporation purchased inventory for $101,100. The company plans to sell it at $103,300, but estimates that it will incur selling costs of $3,300. The company also estimates that the replacement cost of its inventory is $95,000. Assuming a normal profit margin of $4,000 and that the company follows U.S. GAAP, the value of inventory it should report on its balance sheet is *closest to*:

A. $95,000

B. $96,000

C. $97,800

Answer: B

Net realizable value = 103,300 – 3,300 = $100,000

Net realizable value – Normal profit margin = 100,000 – 4,000 = $96,000

Therefore, replacement cost must lie between $96,000 and $100,000.

As the replacement cost of $95,000 does not lie within the specified range, it must be written-up to $96,000.

The adjusted replacement cost of $96,000 is less than the original cost of $101,100. Therefore, inventory should be reported at $96,000.

16. The following information relates to Esther Corporation:

Cost of inventory = $212,212

Estimated selling price = $221,221

Estimated selling costs = $9,100

Replacement cost = $212,200

Normal profit margin = $200

Esther Corporation's inventory under IFRS and U.S. GAAP is *closest to*:

	IFRS ($)	U.S. GAAP ($)
A	211,921	212,200
B	212,121	212,121
C	212,212	211,921

Answer: B

Net realizable value = 221,221 – 9100 = $212,121

NRV is lower than the original cost of $212,212, so under IFRS, inventory would be reported at $212,121.

NRV – Normal profit margin = 212,121 – 200 = $211,921

Replacement cost of $212,200 does not lie within the range of $211,921 and $212,121. Therefore, it must be brought down to $212,121.

Replacement cost of $212,121 is lower than the original cost of $212,212, so under U.S. GAAP inventory would be reported at

$212,121.

17. The following information relates to Jupiter Inc.:

    Cost of inventory = $155,000

    Estimated selling price = $205,000

    Estimated selling costs = $35,000

    Replacement cost = $165,000

    Normal profit margin = $10,000

    Assuming that the company follows U.S. GAAP, the amount of inventory it should report on its balance sheet is *closest to*:

    A. $165,000

    B. $155,000

    C. $120,000

    Answer: B

    Net realizable value = 205,000 – 35,000 = $170,000

    NRV – Normal profit margin = 170,000 – 10,000 = $160,000

    Replacement cost of $165,000 lies between $160,000 and $170,000 and therefore, need not be adjusted.

    The original cost of $155,000 is lower than the replacement cost of $165,000 so inventory will be reported at $155,000.

Use the following information regarding Tiara Corp. to answer Questions 18 to 20:

Quarter	Units Held/Purchased	Unit Cost ($)	Total Cost ($)
Opening Inventory	15	30	450
1	15	30	450
2	12	35	420
3	20	25	500
4	30	20	600

Total	**92**		**2,420**

Given that Tiara sold 10, 12, 15, and 20 units in the four quarters respectively, answer the following questions:

18. Ending inventory if the company uses LIFO cost flow assumption is *closest to*:

    A. $725

    B. $834

    C. $1,075

    Answer: C

    Ending inventory consists of 92 – 57 = 35 units

    Ending inventory value using LIFO = (15 × 30) + (15 × 30) + (5 × 35) = $1,075

19. Cost of goods sold if the company uses FIFO cost flow assumption is *closest to*:

    A. $1,695

    B. $1,586

    C. $1,345

    Answer: A

    Number of units sold = 57

    COGS = (15 × 30) + (15 × 30) + (12 × 35) + (15 × 25) = $1,695

20. Ending inventory, if the company uses the weighted average cost flow assumption, is *closest to*:

    A. $921

    B. $725

    C. $1,075

    Answer: A

    Weighted average price = 2,420 / 92 = $26.3

    Ending inventory = (92 - 57) × 26.30 = $920.65

Use the following information relating to Magna Corp. to answer Questions 21 to 28:

Quarter	Units Held/Purchased	Unit Cost ($)	Total Cost ($)
Opening Inventory	15	24	360
1	25	15	375
2	22	18	396
3	18	20	360
4	20	22	440
Total	**100**		**1,931**

Given that Magna sold 12, 24, 24, and 26 units in the four quarters respectively, answer the following questions:

21. Given that the company uses FIFO, ending inventory under the periodic system is *closest to*:

    A. $336

    B. $308

    C. $447

    Answer: B

    Periodic system with FIFO cost flow assumption:

Quarter	Purchases	Cost	Unit Sales	COGS	EI (units)	EI ($)
OI	15	24			15	
1	25	15	12		28	
2	22	18	24		26	
3	18	20	24		20	
4	20	22	26	1,623	14	308
Total	**100**		**86**			

Ending inventory = 14 × 22 = $308

22. Given that the company uses LIFO cost flow assumption, cost of goods sold under the periodic system is *closest to*:

A. $1,595

B. $1,623

C. $1,535

Answer: A

Periodic system with LIFO cost flow assumption:

Quarter	Purchases	Cost	Unit Sales	COGS	EI (units)	EI ($)
OI	15	24			15	
1	25	15	12		28	
2	22	18	24		26	
3	18	20	24		20	
4	20	22	26	1,595	14	336
Total	**100**		**86**			

COGS = (20 × 22) + (18 × 20) + (22 × 18) + (25 × 15) + (1 × 24) = $1,595

23. Consider the following statements:

Statement 1: Given that the company uses the perpetual system, it would report lower cost of goods sold under the LIFO cost flow assumption for the first quarter than it would under the FIFO cost flow assumption.

Statement 2: Given that the company uses the periodic system, it would report lower ending inventory under the FIFO cost flow assumption than it would under the LIFO cost flow assumption.

Which of the following is *most accurate*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

Perpetual System under LIFO cost flow assumption:

Quarter	Purchases	Cost	Unit Sales	COGS	EI (units)	EI ($)
OI	15	24			15	
1	25	15	12	180	28	555
2	22	18	24	426	26	525
3	18	20	24	450	20	435
4	20	22	26	539	14	336
Total	**100**		**86**	**1,595**		

COGS for the first quarter under the perpetual system with LIFO cost flow assumption:

= 12 × 15 = $180

Perpetual System under FIFO cost flow assumption:

Quarter	Purchases	Cost	Unit Sales	COGS	EI (units)	EI ($)
OI	15	24			15	
1	25	15	12	288	28	447
2	22	18	24	387	26	456
3	18	20	24	420	20	396
4	20	22	26	528	14	308
Total	**100**		**86**	**1,623**		

COGS for the first quarter under the perpetual system with FIFO cost flow assumption:

= 12 × 24 = $288

Ending inventory under the periodic system with LIFO cost flow assumption:

= 14 × 24 = $336

Ending inventory under the periodic system with FIFO cost flow assumption:

$= 14 \times 22 = \$308$

24. Given that the company uses FIFO, cost of goods sold for the second quarter under the perpetual system is *closest to*:

    A. \$387

    B. \$426

    C. \$288

    Answer: A

    COGS = $(3 \times 24) + (21 \times 15) = \$387$

25. Given that the company uses FIFO, ending inventory for the third quarter under the perpetual system is *closest to*:

    A. \$435

    B. \$456

    C. \$396

    Answer: C

    Ending inventory = $(2 \times 18) + (18 \times 20) = \$396$

26. Given that the company uses LIFO, ending inventory for the second quarter under the perpetual system is *closest to*:

    A. \$555

    B. \$525

    C. \$456

    Answer: B

    Ending inventory = $(15 \times 24) + (11 \times 15) = \$525$

27. Given that the company uses LIFO, cost of goods sold for the third quarter under the perpetual system is *closest to*:

    A. \$420

    B. \$450

    C. \$426

    Answer: B

COGS = (18 × 20) + (6 × 15) = $450

28. Given that the company uses the perpetual system and FIFO, which of the following statements is *most accurate*?

    The company would report:

    A. Higher cost of goods sold in the fourth quarter than it would report under the LIFO cost flow assumption.

    B. Higher ending inventory in the fourth quarter than it would report under the LIFO cost flow assumption.

    C. Higher cost of goods sold for the year than it would report under the LIFO cost flow assumption.

    Answer: C

    Please see the schedules above.

Use the following information regarding Mercury Inc. to answer Questions 29 to 33:

Quarter	Units Held/Purchased	Unit Cost ($)	Total Cost ($)
Opening Inventory	17	28	476
1	20	24	480
2	18	26	468
3	25	20	500
4	20	23	460
Total	**100**		**2,384**

Given that the company uses LIFO cost flow assumption and sells 22, 16, 26, and 14 units in the four quarters respectively, answer the following questions:

29. Cost of goods sold under the periodic system is *closest to*:

    A. $1,788

    B. $1,884

C. $1,800

Answer: A

Quarter	Purchases	Cost	Sales	COGS	IOH	EI
OI	17	28			17	
1	20	24	22		15	
2	18	26	16		17	
3	25	20	26		16	
4	20	23	14	1,788	22	596
Total	**100**		**78**			

COGS = (20 × 23) + (25 × 20) + (18 × 26) + (15 × 24) = $1,788

30. Ending inventory under the periodic system is *closest to*:

A. $500

B. $584

C. $596

Answer: C

Ending inventory = (17 × 28) + (5 × 24) = $596

31. Ending inventory for the second quarter under the perpetual system is *closest to*:

A. $584

B. $420

C. $472

Answer: C

Quarter	Purchases	Cost	Sales	COGS	IOH	EI
OI	17	28			17	
1	20	24	22	536	15	420
2	18	26	16	416	17	472
3	25	20	26	526	16	446

4	20	23	14	322	22	584
Total	**100**		**78**	**1,800**		

Ending inventory at the end of Q2 = (15 × 28) + (2 × 26) = $472

32. Cost of goods sold for the third quarter under the perpetual system is *closest to*:

   A. $536

   B. $526

   C. $446

   Answer: B

   COGS for Q3= (25 × 20) + (1 × 26) = $526

33. Which of the following statements regarding Mercury Inc. is *most accurate*?

   A. It would report higher cost of goods sold for the year under the perpetual system than it would under the periodic system.

   B. It would report higher ending inventory for the year under the perpetual system than it would under the periodic system.

   C. It would report the same cost of goods sold for the year under both the perpetual and the periodic systems.

   Answer: A

   COGS for the year under the perpetual system = 536 + 416 + 526 + 322 = $1,800

   COGS for the year under the periodic system = (20 × 23) + (25 × 20) + (18 × 26) + (15 × 24) = $1,788

34. IFRS requires companies to make all of the following disclosures relating to inventory *except*:

   A. The carrying amount of inventories pledged as collateral for liabilities.

   B. Significant estimates applicable to inventories.

   C. Amount of inventory-related expenses for the period.

Answer: B

Disclosure of significant estimates applicable to inventories is required under U.S. GAAP.

Reading 30: Long-Lived Assets

1. Which of the following statements is *most likely* regarding the effects of capitalization on a company's financial statements?
    A. Capitalization reduces the company's reported total asset turnover.
    B. Capitalization increases the company's reported debt-to-assets ratio.
    C. Capitalization decreases the company's outflows from investing activities.
2. Which of the following statements is *least likely* regarding the effects of expensing on a company's financial statements?
    A. Expensing increases the company's net profit margin in future years.
    B. Expensing has no effect on the company's reported debt-to-assets ratio.
    C. Expensing decreases the company's cash flow from investing activities.
3. If construction and sale of buildings is a company's core business activity, interest expenses incurred in financing construction are *most likely* included as a part of the company's:
    A. Non-current assets and operating expenses.
    B. Current assets and COGS.
    C. Current assets and non-operating expenses.
4. Which of the following *least likely* describes the effects of capitalization of interest costs?
    A. The company's reported interest coverage ratio improves.
    B. The company's reported operating cash flow is inflated.
    C. The company's reported investing cash flow is inflated.
5. Assuming straight line depreciation, which of the following

combinations of depreciation-related estimates result in the lowest annual depreciation expense?

A. Longer useful life and lower salvage value

B. Longer useful life and higher salvage value

C. Shorter useful life and higher salvage value

6. Which of the following is *least likely* regarding the effects of impairment recognition on a company's financial statements?

A. The carrying value of non-current assets decreases.

B. Net income falls.

C. Cash flow from operating activities falls.

7. The cost of which of the following assets is *least likely* expensed over time?

A. Intangible assets with a definite useful life

B. Land acquired with the intent to construct a factory on it

C. Machinery with a useful life of 5 years

8. Which of the following statements is *least accurate*?

Capitalization:

A. Decreases cash flow from operating activities in the year of recognition.

B. Increases non-current assets.

C. Decreases cash flow from investing activities in the year of recognition.

9. Which of the following costs is *least likely* capitalized?

A. Costs incurred to increase the production capacity of a machine.

B. Costs incurred to repair a machine.

C. Cash paid to workers for installation of a machine.

10. Amortization of an intangible asset *most likely*:

A. Decreases cash flow from investing activities.

B. Decreases retained earnings.

C. Increases owners' equity.

11. A company that capitalizes an expense *most likely* reports:

A. Higher net income over the life of the asset compared to a company that expenses the cost.

B. Higher shareholders' equity over the life of the asset compared to a company that expenses the cost.

C. Higher cash flow from operations compared to a company that expenses the cost.

12. A company that expenses a cost *least likely* reports:

A. Higher return on equity in the first year compared to a company that capitalizes the cost.

B. Lower net profit margin in the first year compared to a company that capitalizes the cost.

C. Higher variability in reported net income compared to a company that capitalizes the cost.

13. Which of the following is *least likely* to be capitalized under U.S. GAAP?

A. Internally generated goodwill

B. Intangible assets purchased in situations other than business combinations

C. Costs related directly to the development of software for internal use

14. If software development costs incurred in the current period exceed amortization of prior periods' capitalized development costs, net income for the current period would *most likely* be:

A. Lower under capitalizing.

B. Lower under expensing.

C. The same under both methods.

15. Assuming U.S. GAAP applies, which of the following intangible assets

acquired in a business combination is *least likely* recognized separately from goodwill?

A. Copyrights

B. Customer lists

C. High-caliber work force

16. Which of the following depreciation methods will *most likely* result in the highest net income in the early years of an asset's life?

A. Straight-line method

B. Declining balance method

C. MACRS depreciation

17. Which of the following statements is *least accurate* regarding the recognition of a gain/loss on the sale of long-lived assets?

A. The gain/loss is reported on the income statement as part of other gains and losses if the amount is material.

B. Asset disposal-related gains/losses are included in income from continuing operations.

C. The gain/loss on sale of a subsidiary is recognized on the income statement below income from continuing operations.

18. A long-lived asset classified as held-for-sale is *most likely*:

A. Recorded at the lower of cost or carrying value.

B. Not depreciated by the company.

C. Impaired if fair value is less than its historical cost.

19. Which of the following types of assets are *most likely* amortized?

A. Goodwill

B. Tangible assets with finite useful lives

C. Intangible assets with finite lives

20. Which of the following statements about reversals of impairment losses is *least accurate*?

A. IFRS allows reversals of impairment losses only for assets held-for-sale.

B. U.S. GAAP does not allow reversals of impairment losses for assets held-for-use.

C. U.S. GAAP allows reversals of impairment losses for assets held-for-sale.

21. Which of the following statements about upward revaluations of long-lived assets is *most accurate*?

A. U.S. GAAP only allows reversal of impairment losses for assets held-for-sale.

B. IFRS only allows increases in the value of long-lived assets to the extent of previously recognized revaluation losses.

C. Under IFRS, reversal of revaluation loss does not affect shareholders' equity.

22. If management wants to report an improving return on assets over time, it would *most likely* use:

A. An accelerated depreciation method.

B. The straight line method.

C. The units of production method.

Use the following information regarding Jeremy Associates to answer Questions 23 to 27:

The following are excerpts from the annual report for the year ended December 31, 2010 of Jeremy Associates, which is headquartered in the U.S.

Excerpt from the Consolidated Income Statement			
For the Year Ended December 31, 2010 ($ Millions)			
	Note	**2010**	**2009**
Sales	1	38,975	29,649
Cost of sales	2	−15,590	−11,860

Gross profit	4	23,385	17,789
Operating expenses	5	−7,180	−5,452
Impairment losses	9	−7,100	-
Operating profit/loss	6	9,105	12,337
Interest expense	11	−1,600	−1,225
Income before taxes	12	7,505	11,112
Income tax expense	13	−1,285	−1,864
Profit/loss for the financial year from continuing operations	14	6,220	9,248
Profit/loss for the financial year attributable to:			
Equity shareholders	21	5,909	8,324
Minority interests		311	925

Excerpt from the Consolidated Statement of Recognized Income and Expense			
For the Year Ended 31 December 2010 ($ Millions)			
	Note	**2010**	**2009**
Losses/gains on revaluation of available-for-sale investments net of tax	25	−2,090	1,152
Revaluation gain	25	44	-
Net gain/loss recognised directly in equity		11,045	7,095
Profit/loss for the financial year		6,220	9,248

Total recognized income and expense relating to the year		17,265	16,343
Attributable to:			
Equity shareholders		16,402	14,709
Minority interests		863	1,634
		17,265	16,343

Excerpt from the Consolidated Balance Sheet			
At December 31, 2010 ($ Millions)			
	Notes	**2010**	**2009**
Non-current assets			
Property, plant, and equipment	10	41,428	36,295
Goodwill	8	34,597	28,549
Other intangible assets	8	18,649	12,467
Total non-current assets		145,694	128,973
Current assets		24,685	15,713
Total assets		170,379	144,686
Equity			
Accumulated other recognized income and expense	25	34,648	17,946
Total equity		85,913	78,403

Non-current liabilities		55,520	45,491
Current liabilities		28,946	20,792
Total equity and liabilities		170,379	144,686

Excerpts from the Notes to the Consolidated Financial Statements				
Excerpt from Note 8, Intangible Assets				
$ Millions				
Intangible Assets	**Goodwill**	***Software**	**Other**	**Total**
Cost:				
December 31, 2009	65,495	18,770	12,580	96,845
Exchange movements	14,755	3,510	1,526	19,791
Arising on acquisition	1,110	2,150	1,354	4,614
Additions	-	3,610	-	3,610
Disposals	-	−500	-	−500
31-Dec-10	81,360	27,540	15,460	124,360
Accumulated impairment losses and amortization:				
December 31, 2009	36,946	8,820	10,063	55,829
Exchange movements	4,492	340	1,945	6,777
Amortization charge for the year	-	1,145	693	1,838
Impairment losses	5,325	1,215	560	7,100
Disposals	-	−430	-	−430
December 31, 2010	46,763	11,090	13,261	71,114
Net book value:				

December 31, 2009	28,549	9,950	2,517	41,016
December 31, 2010	34,597	16,450	2,199	53,246

*Software with a net book value of $3,140 million has been pledged as collateral against borrowings.

Excerpt from Note 9, Impairment			
Impairment Losses			
Cash Generating Unit	**Reportable Segment**	**2010**	**2009**
Canada	North America	4,475	-
Germany	Europe	2,625	-
Total		7,100	-

Canada

On June 30, 2010, the goodwill was impaired by $2,100 million.... During the second half of the 2010 financial year, impairment losses of $320 million in relation to goodwill and $205 million in relation to software resulted from a fall in the long-term GDP growth rate.

Germany

On June 30, 2010, the goodwill was impaired by $3,700 million.... During the second half of the 2010 financial year, impairment losses of $420 million in relation to goodwill and $355 million in relation to software resulted from adverse changes in the discount rate.... The cash flow projections... were substantially changed from those used on June 30, 2010.

Sensitivity to changes in assumptions

The estimated recoverable amount of the group's operations in Canada and Germany equaled their respected carrying value and, consequently, any adverse change in key assumptions would, in isolation, cause a further impairment loss to be recognized....

Excerpt from Note 10, Sensitivity Analysis ($ billion)		

	Canada		Germany	
	Increase by 1%	Decrease by 1%	Increase by 1%	Decrease by 1%
Pre-tax adjusted discount rate	−0.5	0.5	−0.6	0.7
Long-term growth rate	0.4	−0.3	0.4	−0.3
Budgeted EBITDA	0.2	−0.1	0.3	−0.2
Budgeted capital expenditure	−0.2	0.2	−0.3	0.3

Excerpt from Note 11, Property, Plant, and Equipment

The net book value of land and buildings, and equipment, fixtures, and fittings includes $210 million and $100 million, respectively in relation to assets held under finance leases. Property, plant, and equipment with a net book value of $4,142 million have been pledged as security against borrowings.

Excerpt from Note 12, Movements in Accumulated Other Recognised Income and Expense					
$ Millions					
	Translation Reserve	**Available-for-sale Investments Reserve**	**Asset Revaluation Surplus**	**Other**	**Total**
December 31, 2009	6,285	8,432	2,231	998	17,946
Gains/(losses) arising in the year			44		18,342
Transfer to the income statement on					−750

disposal					
Tax effect					−890
December 31, 2010	26,039	6,342	2,275	−8	34,648

23. The percentage of other intangible assets and property, plant, and equipment pledged as security against borrowings as of December 31, 2010 is *closest to*:

    A. 16.84%

    B. 12.12%

    C. 10.00%

24. Which of the following is *most accurate* regarding the impairment losses in relation to software during the year ended December 31, 2010?

    A. The impairment loss of $205 million resulted from an increase in the pre-tax adjusted discount rate in Germany.

    B. The impairment loss of $355 million resulted from a decrease in the pre-tax adjusted discount rate in Germany.

    C. The impairment loss of $205 million resulted from a decrease in the long-term growth rate in Canada.

25. Given that the pre-adjusted discount rate decreased by 1%, the amount by which impairment losses related to Germany would change is *closest to*:

    A. Impairment losses would increase by $700 million.

    B. Impairment losses would decrease by $500 million.

    C. Impairment losses would decrease by $700 million.

26. The percentage of property, plant, and equipment, based on net book value, that is held under finance leases as of December 31, 2010, is *closest to*:

    A. 0.75%

    B. 0.51%

C. 0.24%

27. The gains and losses for the year resulting from revaluation of assets are *most likely*:

    A. Shown on the consolidated statement of recognized income and expense.

    B. Reflected on the consolidated income statement.

    C. Reported on the consolidated balance sheet.

Use the following information to answer Questions 28 to 32:

Alpha Mining Co. purchased a machine for crushing rocks for $80,000. The machine has a useful life of 8 years and an estimated salvage value of $8,000. In order to maintain the machine, the company will need to replace one of its component parts every 3 years. This part costs $6,000 and is considered to be a significant component.

28. The amount of depreciation expense the company should recognize in Year 1 if it does not use the component method is *closest to*:

    A. $10,000

    B. $9,000

    C. $8,000

29. The amount of depreciation expense the company should recognize in Year 2 if it uses the component method of depreciation is *closest to*:

    A. $11,000

    B. $10,250

    C. $12,000

30. Given that the company replaced the part at the end of Year 3, the amount of depreciation expense it should recognize in Year 4 if it does not use the component method is *closest to*:

    A. $9,000

    B. $12,000

    C. $11,000

31. Given that the company replaced the part at the end of Year 3, the

amount of depreciation expense it should recognize in Year 5 if it uses the component method is *closest to*:

A. \$12,000

B. \$10,250

C. \$9,000

32. Given that the part is replaced every 3 years for \$6,000, total depreciation expense over the 8-year period if the company does not use the component method will *most likely* be:

A. Higher than if the company uses the component method.

B. The same as if the company uses the component method.

C. Lower than if the company uses the component method.

Use the following information to answer Questions 33 and 34:

A company purchased an asset at the end of 2008. Its purchase price and the fair values at the end of 2009 and 2010 are given below:

Asset	**Purchase Price (\$)**	**Fair Value at the End of 2009 (\$)**	**Fair Value at the End of 2010 (\$)**
A	37,500	41,100	35,400

Given that the company follows the revaluation model to report the asset, answer the following questions:

33. The revaluation-related entry on the company's income statement and revaluation surplus at the end of 2009 is *closest to*:

	Income Statement (\$)	**Revaluation Surplus (\$)**
A	0	41,100
B	−5,700	3,600
C	0	3,600

34. The revaluation-related entry on the company's income statement and revaluation surplus at the end of 2010 is *closest to*:

	Income Statement (\$)	**Revaluation Surplus (\$)**
A	−5,700	0

B	−2,100	−3,600
C	−2,100	0

Use the following information to answer Questions 35 to 37:

An analyst obtains the following information about the assets of two companies, both of which follow U.S. GAAP for financial reporting purposes.

Alpha Inc. owns a piece of equipment that has a carrying value of $5,200. The company estimates that the total expected future cash flows from this piece of equipment would amount to $4,200 (present value equals $3,800). The company estimates that the fair value of the asset is $5,000 and selling costs would amount to $500.

Beta Inc. owns a piece of equipment that has a carrying value of $6,600. The company estimates that the total expected future cash flows from this piece of equipment would amount to $6,700 (present value equals $6,400). The company estimates that the fair value of the asset is $6,300 and selling costs would amount to $400.

13. Which of the following statements is *most accurate*?
    A. Only Alpha Inc.'s asset has been impaired.
    B. Only Beta Inc.'s asset has been impaired.
    C. Both the companies' assets have been impaired.
14. The amount of impairment loss recognized by Alpha Inc. is *closest to*:
    A. $700
    B. $1,400
    C. $200
15. The impairment loss will *most likely* reduce Alpha Inc.'s:
    A. Current assets by $200.
    B. Income by $700.
    C. Carrying value of the equipment to $5,000.

Use the following information to answer Questions 38 and 39:

At the end of 2008, Mega Constructors purchases a piece of machinery for $1.2 million. The company uses the straight-line method of depreciation and estimates that the machinery would have a useful life of 8 years and zero salvage value at the end of its useful life.

At the end of 2010, the company estimates that the expected future cash flows from the machine will amount to $700,000 (present value equals $680,000). It further estimates that the fair value of the machine is $720,000 and selling costs would amount to $25,000.

38. Given that the company uses U.S. GAAP for financial reporting purposes, the amount of impairment loss it will recognize on its income statement is *closest to*:

    A. $180,000

    B. $200,000

    C. $220,000

39. Given that the company uses IFRS for financial reporting purposes, the amount of impairment loss it will recognize on its income statement is *closest to*:

    A. $220,000

    B. $205,000

    C. $200,000

40. Global Traders purchases a piece of equipment for $1.5 million and incurs the following expenses:

    Freight charges = $250,000

    Installation charges = $25,000

    Cost of training machine maintenance staff = $12,000

    Cost of strengthening the factory floor = $5,500

    Cost of painting factory walls = $7,000

    The amounts capitalized and expensed by the company are *closest to*:

	Balance Sheet ($)	**Income Statement ($)**
A	1,775,000	24,500

B	1,780,500	19,000
C	1,792,500	7,000

41. Magnus Corp is planning to expand the company's overseas operations. It starts construction of a factory in Elantica and obtains a loan of $25 million at an interest rate of 7.5%. The company's directors estimate that the factory will be completed in 5 years. During the construction period, the company invests the borrowed funds in money market instruments and earns $135,000. The amount of interest cost that would be capitalized under U.S. GAAP and IFRS is *closest to*:

	U.S. GAAP ($)	IFRS ($)
A	937,500	924,000
B	1,875,000	1,740,000
C	9,375,000	9,240,000

42. Investment property is *most likely* to be:
    A. Used for housing a company's administrative activities.
    B. Given for rent.
    C. Included in the company's inventory.
43. Consider the following statements:

    Statement 1: If inventory is subsequently classified as investment property and valued using the fair value model, the difference in value between the carrying amount and fair value at the time of transfer is recognized as profit or loss.

    Statement 2: If investment property is valued using the cost model, a move to owner-occupied property will not lead to a change in the carrying amount of the property transferred.

    Which of the following is *most likely*?
    A. Only Statement 1 is incorrect.
    B. Only Statement 2 is incorrect.
    C. Both statements are correct.

Reading 30: Long-Lived Assets

1. Which of the following statements is *most likely* regarding the effects of capitalization on a company's financial statements?

   A. Capitalization reduces the company's reported total asset turnover.

   B. Capitalization increases the company's reported debt-to-assets ratio.

   C. Capitalization decreases the company's outflows from investing activities.

   Answer: A

   Capitalization of an expense results in an **increase** in non-current assets, which leads to a **decrease** in the total asset turnover ratio (sales/assets) and the debt-to-assets ratio (debt/assets).

   Capitalization results in a **decrease** in CFI or an **increase** in **outflows** from investing activities.

2. Which of the following statements is *least likely* regarding the effects of expensing on a company's financial statements?

   A. Expensing increases the company's net profit margin in future years.

   B. Expensing has no effect on the company's reported debt-to-assets ratio.

   C. Expensing decreases the company's cash flow from investing activities.

   Answer: C

   Expensing results in an increase in NP margin in the future, as no depreciation or amortization expense is recognized in the future.

   Expensing has no effect on total debt and total assets, and reduces the company's cash flow from **operating** activities (not investing activities).

3. If construction and sale of buildings is a company's core business

activity, interest expenses incurred in financing construction are *most likely* included as a part of the company's:

A. Non-current assets and operating expenses.

B. Current assets and COGS.

C. Current assets and non-operating expenses.

Answer: B

If construction and sale of buildings is a company's core business activity, interest expenses incurred in financing construction are included as a part of the company's inventory (current assets) and recognized as COGS in the period that buildings are sold.

4. Which of the following *least likely* describes the effects of capitalization of interest costs?

A. The company's reported interest coverage ratio improves.

B. The company's reported operating cash flow is inflated.

C. The company's reported investing cash flow is inflated.

Answer: C

When a company capitalizes its interest costs, it does not include the capitalized amount in interest expense on its income statement, thereby inflating reported profits and reporting an enhanced ability to meet its debt servicing obligations.

The related cash outflow is classified as an **outflow** from **investing** activities instead of an outflow from operating activities, so reported CFO is inflated (higher).

5. Assuming straight line depreciation, which of the following combinations of depreciation-related estimates result in the lowest annual depreciation expense?

A. Longer useful life and lower salvage value

B. Longer useful life and higher salvage value

C. Shorter useful life and higher salvage value

Answer: B

Estimates of longer useful lives and higher salvage values result in lower depreciation expense.

6. Which of the following is *least likely* regarding the effects of impairment recognition on a company's financial statements?

   A. The carrying value of non-current assets decreases.

   B. Net income falls.

   C. Cash flow from operating activities falls.

   Answer: C

   Impairment recognition does not affect a company's cash flows.

7. The cost of which of the following assets is *least likely* expensed over time?

   A. Intangible assets with a definite useful life

   B. Land acquired with the intent to construct a factory on it

   C. Machinery with a useful life of 5 years

   Answer: B

   Land is a **non-depreciable** asset.

   Intangible assets with a definite useful life are **amortized** over time.

   Machinery with a useful life of more than 1 year is **depreciated** over its useful life.

8. Which of the following statements is *least accurate*?

   Capitalization:

   A. Decreases cash flow from operating activities in the year of recognition.

   B. Increases non-current assets.

   C. Decreases cash flow from investing activities in the year of recognition.

   Answer: A

   Capitalization increases non-current assets and reduces cash flow from investing activities. Cash flow from operating activities is not affected.

9. Which of the following costs is *least likely* capitalized?
   A. Costs incurred to increase the production capacity of a machine.
   B. Costs incurred to repair a machine.
   C. Cash paid to workers for installation of a machine.

   Answer: B

   Costs incurred to bring the asset into a workable condition (e.g., shipping and installation costs) are capitalized.

   Costs incurred to increase the production capacity of a machine or to increase its useful life are also capitalized.

   Repair and maintenance costs are **expensed** in the period in which they are incurred.

10. Amortization of an intangible asset *most likely*:
    A. Decreases cash flow from investing activities.
    B. Decreases retained earnings.
    C. Increases owners' equity.

    Answer: B

    Amortization of an intangible asset decreases non-current assets, net income, retained earnings, and owners' equity. Cash flow from investing activities is not affected.

11. A company that capitalizes an expense *most likely* reports:
    A. Higher net income over the life of the asset compared to a company that expenses the cost.
    B. Higher shareholders' equity over the life of the asset compared to a company that expenses the cost.
    C. Higher cash flow from operations compared to a company that expenses the cost.

    Answer: C

    Shareholders' equity and net income over the life of the asset are the same regardless of whether a company capitalizes or expenses a cost.

However, cash flow from operations is **higher** for a company that chooses to capitalize the cost, because the related outflow of cash is classified as an investing activity.

12. A company that expenses a cost *least likely* reports:

    A. Higher return on equity in the first year compared to a company that capitalizes the cost.

    B. Lower net profit margin in the first year compared to a company that capitalizes the cost.

    C. Higher variability in reported net income compared to a company that capitalizes the cost.

    Answer: A

    A company that expenses an item reports a lower return on equity in the year of expense recognition due to lower net income.

13. Which of the following is *least likely* to be capitalized under U.S. GAAP?

    A. Internally generated goodwill

    B. Intangible assets purchased in situations other than business combinations

    C. Costs related directly to the development of software for internal use

    Answer: A

    U.S. GAAP does not permit the recognition of internally generated goodwill. Any associated costs must be expensed when incurred.

14. If software development costs incurred in the current period exceed amortization of prior periods' capitalized development costs, net income for the current period would *most likely* be:

    A. Lower under capitalizing.

    B. Lower under expensing.

    C. The same under both methods.

    Answer: B

An expensing firm would recognize the current year's development costs on the income statement, while a capitalizing firm would recognize amortization of previous periods' capitalized costs as an expense on the income statement.

15. Assuming U.S. GAAP applies, which of the following intangible assets acquired in a business combination is *least likely* recognized separately from goodwill?

    A. Copyrights

    B. Customer lists

    C. High-caliber work force

    Answer: C

    Under U.S. GAAP, intangible assets should be recognized separately from goodwill if they arise from contractual or legal rights, or can be separated from the acquired company.

    Copyrights and customer lists can usually be separated from goodwill. However, it is difficult to quantify the caliber of the work force so it is typically included in goodwill.

16. Which of the following depreciation methods will *most likely* result in the highest net income in the early years of an asset's life?

    A. Straight-line method

    B. Declining balance method

    C. MACRS depreciation

    Answer: A

    The declining balance method and MACRS depreciation are accelerated depreciation methods that allocate a greater proportion of the cost of an asset to the early years of its life.

    The straight-line method distributes the cost of the asset evenly over its useful life.

17. Which of the following statements is *least accurate* regarding the recognition of a gain/loss on the sale of long-lived assets?

    A. The gain/loss is reported on the income statement as part of other gains and losses if the amount is material.

B. Asset disposal-related gains/losses are included in income from continuing operations.

C. The gain/loss on sale of a subsidiary is recognized on the income statement below income from continuing operations.

Answer: A

The gain/loss is reported on the income statement as part of other gains and losses if the amount is **insignificant**. If the amount is material, the gain/loss is shown as a separate line item.

18. A long-lived asset classified as held-for-sale is *most likely*:

A. Recorded at the lower of cost or carrying value.

B. Not depreciated by the company.

C. Impaired if fair value is less than its historical cost.

Answer: B

An asset classified as held-for-sale is recorded at the lower of cost or **fair value less selling costs**.

It is not depreciated and is impaired if its fair value (less selling costs) is less than its **carrying value**.

19. Which of the following types of assets are *most likely* amortized?

A. Goodwill

B. Tangible assets with finite useful lives

C. Intangible assets with finite lives

Answer: C

Intangible assets with finite useful lives are amortized over their useful lives.

20. Which of the following statements about reversals of impairment losses is *least accurate*?

A. IFRS allows reversals of impairment losses only for assets held-for-sale.

B. U.S. GAAP does not allow reversals of impairment losses for assets held-for-use.

C. U.S. GAAP allows reversals of impairment losses for assets held-for-sale.

Answer: A

IFRS allows reversals of impairment losses if the values of assets increase, regardless of their classification.

21. Which of the following statements about upward revaluations of long-lived assets is *most accurate*?

A. U.S. GAAP only allows reversal of impairment losses for assets held-for-sale.

B. IFRS only allows increases in the value of long-lived assets to the extent of previously recognized revaluation losses.

C. Under IFRS, reversal of revaluation loss does not affect shareholders' equity.

Answer: A

Under IFRS, upward revaluations do impact shareholders' equity (either directly through the revaluation surplus) or indirectly (through the income statement). Further, under IFRS, revaluations may take the value of an asset beyond its historical cost.

22. If management wants to report an improving return on assets over time, it would *most likely* use:

A. An accelerated depreciation method.

B. The straight line method.

C. The units of production method.

Answer: A

Accelerated depreciation methods result in improving asset turnover, operating profit margins, and return on assets over time.

Use the following information regarding Jeremy Associates to answer Questions 23 to 27:

The following are excerpts from the annual report for the year ended

December 31, 2010 of Jeremy Associates, which is headquartered in the U.S.

Excerpt from the Consolidated Income Statement			
For the Year Ended December 31, 2010 ($ Millions)			
	Note	**2010**	**2009**
Sales	1	38,975	29,649
Cost of sales	2	−15,590	−11,860
Gross profit	4	23,385	17,789
Operating expenses	5	−7,180	−5,452
Impairment losses	9	−7,100	-
Operating profit/loss	6	9,105	12,337
Interest expense	11	−1,600	−1,225
Income before taxes	12	7,505	11,112
Income tax expense	13	−1,285	−1,864
Profit/loss for the financial year from continuing operations	14	6,220	9,248
Profit/loss for the financial year attributable to:			
Equity shareholders	21	5,909	8,324
Minority interests		311	925

Excerpt from the Consolidated Statement of Recognized Income and Expense			
For the Year Ended December 31, 2010 ($ Millions)			
	Note	**2010**	**2009**

Losses/gains on revaluation of available-for-sale investments net of tax	25	−2,090	1,152
Revaluation gain	25	44	-
Net gain/loss recognized directly in equity		11,045	7,095
Profit/loss for the financial year		6,220	9,248
Total recognized income and expense relating to the year		17,265	16,343
Attributable to:			
Equity shareholders		16,402	14,709
Minority interests		863	1,634
		17,265	16,343

Excerpt from the Consolidated Balance Sheet			
At December 31, 2010 ($ Millions)			
	Notes	**2010**	**2009**
Non-current assets			
Property, plant, and equipment	10	41,428	36,295
Goodwill	8	34,597	28,549
Other intangible assets	8	18,649	12,467
Total non-current assets		145,694	128,973
Current assets		24,685	15,713

Total assets		170,379	144,686
Equity			
Accumulated other recognized income and expense	25	34,648	17,946
Total equity		85,913	78,403
Non-current liabilities		55,520	45,491
Current liabilities		28,946	20,792
Total equity and liabilities		170,379	144,686

Excerpts from the Notes to the Consolidated Financial Statements

Excerpt from Note 8, Intangible Assets				
$ Millions				
Intangible Assets	**Goodwill**	***Software**	**Other**	**Total**
Cost:				
December 31, 2009	65,495	18,770	12,580	96,845
Exchange movements	14,755	3,510	1,526	19,791
Arising on acquisition	1,110	2,150	1,354	4,614
Additions	-	3,610	-	3,610
Disposals	-	−500	-	−500
December 31, 2010	81,360	27,540	15,460	124,360
Accumulated impairment losses and amortization:				
December 31, 2009	36,946	8,820	10,063	55,829

Exchange movements	4,492	340	1,945	6,777
Amortization charge for the year	-	1,145	693	1,838
Impairment losses	5,325	1,215	560	7,100
Disposals	-	−430	-	−430
December 31, 2010	46,763	11,090	13,261	71,114
Net book value:				
December 31, 2009	28,549	9,950	2,517	41,016
December 31, 2010	34,597	16,450	2,199	53,246

*Software with a net book value of $3,140 million has been pledged as collateral against borrowings.

Excerpt from Note 9, Impairment			
Impairment Losses			
Cash Generating Unit	**Reportable Segment**	**2010**	**2009**
Canada	North America	4,475	-
Germany	Europe	2,625	-
Total		7,100	-

Canada

On June 30, 2010, the goodwill was impaired by $2,100 million… During the second half of the 2010 financial year, impairment losses of $320 million in relation to goodwill and $205 million in relation to software resulted from a fall in the long-term GDP growth rate.

Germany

On June 30, 2010, the goodwill was impaired by $3,700 million… During the second half of the 2010 financial year, impairment losses of $420 million in relation to goodwill and $355 million in relation to software resulted from adverse changes in the discount rate… The cash flow projections… were substantially changed from those used on June 30, 2010.

Sensitivity to changes in assumptions

The estimated recoverable amount of the group's operations in Canada and Germany equaled their respected carrying value and, consequently, any adverse change in key assumption would, in isolation, cause a further impairment loss to be recognized…

Excerpt from Note 10, Sensitivity Analysis ($ billion)				
	Canada		**Germany**	
	Increase by 1%	**Decrease by 1%**	**Increase by 1%**	**Decrease by 1%**
Pre-tax adjusted discount rate	−0.5	0.5	−0.6	0.7
Long-term growth rate	0.4	−0.3	0.4	−0.3
Budgeted EBITDA	0.2	−0.1	0.3	−0.2
Budgeted capital expenditure	−0.2	0.2	−0.3	0.3

Excerpt from Note 11, Property, Plant, and Equipment

The net book value of land and buildings and equipment, fixtures, and fittings includes $210 million and $100 million, respectively in relation to assets held under finance leases. Property, plant, and equipment with a net book value of $4,142 million have been pledged as security against borrowings.

Excerpt from Note 12, Movements in Accumulated Other Recognized Income and Expense					
$ Millions					
	Translation Reserve	**Available-for-sale Investments**	**Asset Revaluation Surplus**	**Other**	**Total**

		Reserve			
December 31, 2009	6,285	8,432	2,231	998	17,946
Gains/(losses) arising in the year	.	.	44	.	18,342
Transfer to the income statement on disposal	.	.	.	.	−750
Tax effect	.	.	.	.	−890
December 31, 2010	26,039	6,342	2,275	−8	34,648

23. The percentage of other intangible assets and property, plant, and equipment pledged as security against borrowings as of 31 December 2010 is *closest to*:

    A. 16.84%

    B. 12.12%

    C. 10.00%

    Answer: B

    Assets that have been pledged as security against borrowings are software with a net book value of $3,140 million, and property, plant, and equipment with a net book value of $4,142 million.

    Therefore, percentage of other intangible assets and property, plant, and equipment pledged as security against borrowings:

    = (3,140 + 4,142) / (18,649 + 41,428) = 12.12%

24. Which of the following is *most accurate* regarding the impairment losses in relation to software during the year ended December 31, 2010?

    A. The impairment loss of $205 million resulted from an increase in the pre-tax adjusted discount rate in Germany.

B. The impairment loss of $355 million resulted from a decrease in the pre-tax adjusted discount rate in Germany.

C. The impairment loss of $205 million resulted from a decrease in the long-term growth rate in Canada.

Answer: C

Excerpt from Note 9, Impairment.

25. Given that the pre-adjusted discount rate decreased by 1%, the amount by which impairment losses related to Germany would change is *closest to*:

A. Impairment losses would increase by $700 million.

B. Impairment losses would decrease by $500 million.

C. Impairment losses would decrease by $700 million.

Answer: C

Excerpt 10, Sensitivity analysis.

26. The percentage of property, plant, and equipment, based on net book value, that is held under finance leases as of December 31, 2010, is *closest to*:

A. 0.75%

B. 0.51%

C. 0.24%

Answer: A

The net book value of land and buildings and equipment, fixtures, and fittings includes $210 million and $100 million, respectively in relation to assets held under finance leases (Note 11). Therefore, the percentage of property, plant, and equipment that is held under finance leases is calculated as:

= (210 + 100) / 41,428 = 0.75%

27. The gains and losses for the year resulting from revaluation of assets are *most likely*:

A. Shown on the consolidated statement of recognized income and expense.

B. Reflected on the consolidated income statement.

C. Reported on the consolidated balance sheet.

Answer: A

The gains and losses resulting from revaluation of asset are recognized directly in equity and shown on the consolidated statement of recognized income and expense as well as in the notes to the financial statements.

Use the following information to answer Questions 28 to 32:

Alpha Mining Co. purchased a machine for crushing rocks for $80,000. The machine has a useful life of 8 years and an estimated salvage value of $8,000. In order to maintain the machine, the company will need to replace one of its component parts every 3 years. This part costs $6,000 and is considered to be a significant component.

28. The amount of depreciation expense the company should recognize in Year 1 if it does not use the component method is *closest to*:

A. $10,000

B. $9,000

C. $8,000

Answer: B

Depreciation expense = (80,000 – 8,000) / 8 = $9,000

29. The amount of depreciation expense the company should recognize in Year 2 if it uses the component method of depreciation is *closest to*:

A. $11,000

B. $10,250

C. $12,000

Answer: B

Depreciation expense = [(80,000 – 6,000 – 8,000) / 8] + (6,000 / 3) = $10,250

30. Given that the company replaced the part at the end of Year 3, the

amount of depreciation expense it should recognize in Year 4 if it does not use the component method is *closest to*:

A. $9,000

B. $12,000

C. $11,000

Answer: C

Depreciation expense = [(80,000 – 8,000) / 8] + (6,000 / 3) = $11,000

31. Given that the company replaced the part at the end of Year 3, the amount of depreciation expense it should recognize in Year 5 if it uses the component method is *closest to*:

A. $12,000

B. $10,250

C. $9,000

Answer: B

Depreciation expense = [(80,000 – 6,000 – 8,000) / 8] + (6,000 / 3) = $10,250

32. Given that the part is replaced every 3 years for $6,000, total depreciation expense over the 8-year period if the company does not use the component method will *most likely* be:

A. Higher than if the company uses the component method.

B. The same as if the company uses the component method.

C. Lower than if the company uses the component method.

Answer: B

If the company does not use the component method, total depreciation charged over the 8 years given that the part is replaced every 3 years is calculated as follows:

Depreciation expense each year for the first 3 years = (80,000 – 8,000) / 8 = $9,000

Depreciation expense for the next 5 years = [(80,000 – 8,000) / 8] +

(6,000 / 3) = $11,000

Therefore, total depreciation expense = (9,000 × 3) + (11,000 × 5) = **$82,000**

If the company does use the component method, total depreciation charged over the 8 years is calculated as:

= 10,250 × 8 = **$82,000**

Use the following information to answer Questions 33 and 34:

A company purchased an asset at the end of 2008. Its purchase price and the fair values at the end of 2009 and 2010 are given below:

Asset	Purchase Price ($)	Fair value at the end of 2009 ($)	Fair value at the end of 2010 ($)
A	37,500	41,100	35,400

Given that the company follows the revaluation model to report the asset, answer the following questions:

33. The revaluation-related entry on the company's income statement and revaluation surplus at the end of 2009 is *closest to*:

	Income Statement ($)	Revaluation Surplus ($)
A	0	41,100
B	−5,700	3,600
C	0	3,600

Answer: C

Revaluation gain in 2009 = 41,100 – 37,500 = $3,600

The increase in value will be recorded directly in shareholders' equity as revaluation surplus.

34. The revaluation-related entry on the company's income statement and revaluation surplus at the end of 2010 is *closest to*:

	Income Statement ($)	Revaluation Surplus ($)
A	−5,700	0
B	−2,100	−3,600

C	−2,100	0

Answer: B

Revaluation loss in 2010 = 41,100 – 35,400 = $5,700

The decrease in value from the Year 1 value ($41,100) to the historical cost ($37,500) will reverse the previously recognized increase in value. Therefore, the revaluation surplus will be reduced by $3,600.

The remaining decrease in value ($2,100), from the historical cost ($37,500) to the current fair value ($35,400) will be recorded as a loss on the income statement.

Use the following information to answer Questions 35 to 37:

An analyst obtains the following information about the assets of two companies, both of which follow U.S. GAAP for financial reporting purposes.

Alpha Inc. owns a piece of equipment that has a carrying value of $5,200. The company estimates that the total expected future cash flows from this piece of equipment would amount to $4,200 (present value equals $3,800). The company estimates that the fair value of the asset is $5,000 and selling costs would amount to $500.

Beta Inc. owns a piece of equipment that has a carrying value of $6,600. The company estimates that the total expected future cash flows from this piece of equipment would amount to $6,700 (present value equals $6,400). The company estimates that the fair value of the asset is $6,300 and selling costs would amount to $400.

35. Which of the following statements is *most accurate*?

A. Only Alpha Inc.'s asset has been impaired.

B. Only Beta Inc.'s asset has been impaired.

C. Both the companies' assets have been impaired.

Answer: A

Beta Inc.'s asset is not impaired because its carrying value ($6,600) is lower than the value of its undiscounted expected future cash flows ($6,700).

36. The amount of impairment loss recognized by Alpha Inc. is *closest to*:

    A. $700

    B. $1,400

    C. $200

    Answer: C

    Impairment loss under U.S. GAAP = Carrying value – Fair value = 5,200 – 5,000 = $200

37. The impairment loss will *most likely* reduce Alpha Inc.'s:

    A. Current assets by $200.

    B. Income by $700.

    C. Carrying value of the equipment to $5,000.

    Answer: C

    Alpha Inc's non-current assets will decrease by $200 to $5,000 and it will recognize a loss of $200 on the income statement.

Use the following information to answer Questions 38 and 39:

At the end of 2008, Mega Constructors purchases a piece of machinery for $1.2 million. The company uses the straight-line method of depreciation and estimates that the machinery would have a useful life of 8 years and zero salvage value at the end of its useful life.

At the end of 2010, the company estimates that the expected future cash flows from the machine will amount to $700,000 (present value equals $680,000). It further estimates that the fair value of the machine is $720,000 and selling costs would amount to $25,000.

38. Given that the company uses U.S. GAAP for financial reporting purposes, the amount of impairment loss it will recognize on its income statement is *closest to*:

    A. $180,000

    B. $200,000

    C. $220,000

    Answer: A

Under U.S. GAAP, an asset is considered impaired when its carrying value exceeds the total value of its undiscounted expected future cash flows. The impairment loss is then calculated as the asset's carrying value minus its fair value.

Depreciation expense = 1,200,000 / 8 = $150,000

Therefore, carrying value at the end of 2010 = 1,200,000 – (150,000 × 2) = $900,000

The asset's carrying value ($900,000) is greater than its undiscounted expected future cash flows ($700,000) and is therefore impaired.

Impairment loss = 900,000 – 720,000 = **$180,000**

39. Given that the company uses IFRS for financial reporting purposes, the amount of impairment loss it will recognize on its income statement is *closest to*:

A. $220,000

B. $205,000

C. $200,000

Answer: B

Under IFRS, an asset is considered impaired when its carrying amount exceeds its recoverable amount. The recoverable amount equals the higher of "fair value less costs to sell" and "value in use," where "value in use" refers to the discounted value of future cash flows expected from the asset. The impairment loss is then calculated as the asset's carrying value minus the recoverable amount.

Carrying value of the asset at the end of 2010 = $900,000

Fair value less costs to sell = 720,000 – 25,000 = $695,000

Value in use = $680,000

Therefore, recoverable amount = $695,000

Impairment loss = 900,000 – 695,000 = **$205,000**

40. Global Traders purchases a piece of equipment for $1.5 million and incurs the following expenses:

Freight charges = $250,000

Installation charges = $25,000

Cost of training machine maintenance staff = $12,000

Cost of strengthening the factory floor = $5,500

Cost of painting factory walls = $7,000

The amounts capitalized and expensed by the company are *closest to*:

	Balance Sheet ($)	Income Statement ($)
A	1,775,000	24,500
B	1,780,500	19,000
C	1,792,500	7,000

Answer: B

The cost of training the machine maintenance staff is not necessary to ready the asset for its intended use and is therefore expensed. Further, the cost of painting factory walls is also expensed as it does not enhance the productive capacity of the asset.

Amount capitalized on the balance sheet

= 1,500,000 + 250,000 + 25,000 + 5,500 = $1,780,500

Amount expensed on the income statement = 12,000 + 7,000 = $19,000

41. Magnus Corp is planning to expand the company's overseas operations. It starts construction of a factory in Elantica and obtains a loan of $25 million at an interest rate of 7.5%. The company's directors estimate that the factory will be completed in 5 years. During the construction period, the company invests the borrowed funds in money market instruments and earns $135,000. The amount of interest cost that would be capitalized under U.S. GAAP and IFRS is *closest to*:

	U.S. GAAP($)	IFRS ($)
A	937,500	924,000
B	1,875,000	1,740,000
C	9,375,000	9,240,000

Answer: C

Interest cost capitalized under U.S. GAAP = 25m × 0.075 × 5 = **$9,375,000**

Interest cost capitalized under IFRS = 9,375,000 – 135,000 = **$9,240,000**

42. Investment property is *most likely* to be:

    A. Used for housing a company's administrative activities.

    B. Given for rent.

    C. Included in the company's inventory.

    Answer: B

    IFRS defines investment property as property that is owned (or leased under a finance lease) for the purpose of earning rent or capital appreciation or both.

43. Consider the following statements:

    Statement 1: If inventory is subsequently classified as investment property and valued using the fair value model, the difference in value between the carrying amount and fair value at the time of transfer is recognised as profit or loss.

    Statement 2: If investment property is valued using the cost model, a move to owner-occupied property will not lead to a change in the carrying amount of the property transferred.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

    Answer: C

    Both statements are correct.

Reading 31: Income Taxes

1. An increase in DTL *most likely* results in a(n):
   A. Decrease in income tax expense.
   B. Increase in current assets.
   C. Decrease in shareholders' equity.
2. A decrease in the valuation allowance *most likely* results in a(n):
   A. Increase in total assets.
   B. Decrease in shareholders' equity.
   C. Increase in income tax expense.
3. A company reports DTA of $300 million and DTL of $200 million on its balance sheet for the year ended December 2009. Tax rates from 2010 onward are brought down from 40% to 30%. In response to this change in tax rates, the decrease in the company's shareholders' equity is *closest to*:
   A. $25 million.
   B. $10 million.
   C. $75 million.
4. Taxable temporary differences would *most likely* arise when:
   A. The carrying amount of a liability exceeds its tax base.
   B. The carrying amount of an asset exceeds its tax base.
   C. The carrying amount of an asset is less than its tax base.
5. Deductible temporary differences *least likely* arise when:
   A. The carrying amount of a liability is less than its tax base.
   B. The carrying amount of an asset is less than its tax base.
   C. The tax base of a liability is less than its carrying amount.

Use the following information to answer Questions 6 to 12:

ABC Company uses the straight-line method of depreciation on its financial statements to write off a piece of equipment that it purchased for $10,000. The asset has an estimated salvage value of zero and a useful life of 4 years. On the tax return it writes off the asset over 2 years with zero salvage value. The company is taxed at 30%.

6. The difference between the amount of depreciation recognized on the income statement and on the tax return will result in a:

   A. Permanent difference.

   B. Deferred tax liability.

   C. Deferred tax asset.

7. The carrying value of the asset on the balance sheet for Year 2 is *closest to*:

   A. $7,500

   B. $5,000

   C. $2,500

8. The tax base of the asset as of the end of Year 2 is *closest to*:

   A. $7,500

   B. $5,000

   C. Zero

9. The amount of DTL/DTA recognized on the balance sheet for Year 2 is *closest to*:

   A. $2,000 DTA.

   B. $1,500 DTL.

   C. $1,500 DTA.

10. The change in DTL over Year 3 is *closest to*:

    A. $750 increase.

    B. $750 decrease.

    C. $500 increase.

11. The change in DTL over Year 4 is *closest to*:

A. $750 increase.

B. $750 decrease.

C. $500 increase.

12. For Year 3, which of the following statements is *most likely*?

    A. Income tax expense will be greater than taxes payable by $750.

    B. Income tax expense will be lower than taxes payable by $750.

    C. Income tax expense will be greater than taxes payable by $500.

13. A company had recognized a valuation allowance against a significant portion of its deferred tax assets. If the company now believes that its future profitability is set to rise it will *most likely* result in a(n):

    A. Increase in the valuation allowance.

    B. Increase in deferred tax assets.

    C. Decrease in deferred tax liabilities.

14. A company incurred $1 million in research and development costs. All of these were expensed for financial reporting, but for tax purposes these costs will be written off over 2 years. Which of the following statements is *most likely* at the end of Year 1?

    A. The tax base of the asset exceeds the carrying value by $500,000 at the end of Year 1.

    B. This is an example of a permanent difference.

    C. The tax base of the asset is lower than its carrying value by $500,000 at the end of Year 1.

15. Deferred tax liabilities should be treated as equity when:

    A. They are caused by permanent differences.

    B. They are not expected to reverse.

    C. The amount of tax payments is uncertain.

16. On the financial statements, a company recognizes the entire amount of an expense in the year it was incurred. However, for tax purposes the expense is capitalized and written-off over 3 years. This will *most likely* result in:

A. A deferred tax asset.

B. A deferred tax liability.

C. Neither a deferred tax asset nor a deferred tax liability.

17. A company received cash in Year 1 for rent revenue that will be recognized on its financial statements in Year 2. However, tax authorities tax the revenue upon receipt of cash. This will *most likely* result in:

A. A deferred tax asset.

B. A deferred tax liability.

C. Neither a deferred tax asset nor a deferred tax liability.

18. Accounting standards allow ABC Company to recognize interest income on its financial statements. However ABC is not allowed to recognize such items on its tax return. This will *most likely* result in:

A. A deferred tax asset.

B. A deferred tax liability.

C. Neither a deferred tax asset nor a deferred tax liability.

19. Tax credits that directly reduce taxes are *most likely* classified as:

A. Deferred tax assets.

B. Deferred tax liabilities.

C. Permanent differences.

20. ABC Company reports the following amounts on its 2009 income statement and balance sheet:

Net income after tax: $25 million

Total assets: $400 million

Total liabilities: $300 million

Deferred tax assets: $35 million

Deferred tax liabilities: $45 million

A reduction in the statutory tax rate will *most likely:*

A. Benefit the income statement and have no effect on the balance sheet.

B. Benefit the income statement and improve the balance sheet.

C. Weaken the income statement and improve the balance sheet.

21. Over the past 3 years, ABC Company has reported a steady increase in its valuation allowance. This trend *most likely* suggests that:

A. The company's future profitability prospects have diminished.

B. The company's future profitability prospects have improved.

C. The company's shareholders' equity has risen.

22. Given a statutory tax rate of 35%, ABC Company records taxable income of $450,000 on its 2009 tax return. It also reports an increase in net deferred tax liabilities amounting to $50,000. ABC's income tax expense for 2009 is *closest to:*

A. $207,500

B. $107,500

C. $500,000

23. Which of the following will *most likely* result in a deferred tax liability?

A. Higher expenses are charged in the income statement compared to the tax return.

B. Pretax profit is higher than taxable income.

C. An asset's tax base is higher than its carrying value.

24. Which of the following will *least likely* result in a deferred tax asset?

A. Taxable income is higher than pretax profit.

B. Taxes payable are greater than income tax expense.

C. An asset's tax base is lower than its carrying value.

Use the following information to answer Questions 25 to 31:

Royal Manufacturers acquires an asset for $280,000. The asset has a useful life of 4 years and an estimated salvage value of $20,000. It is expected to generate $150,000 of cash flow each year over its useful life. Royal will depreciate the asset using the double-declining balance method for tax purposes, but for financial reporting purposes it will depreciate the asset on a straight-line basis. The company's tax rate is 40%.

25. Taxable income in Year 1 is *closest to*:

    A. $85,000

    B. $10,000

    C. $34,000

26. Pre-tax income in Year 2 is *closest to*:

    A. $65,000

    B. $80,000

    C. $85,000

27. Income tax expense in Year 3 is *closest to*:

    A. $46,000

    B. $34,000

    C. $32,000

28. Taxes payable in Year 4 are *closest to*:

    A. $54,000

    B. $34,000

    C. $46,000

29. Which of the following statements is *most accurate*?

    The company will report:

    A. Higher depreciation expense on the tax return than on the financial statements over the 4 years.

    B. Lower taxes payable on the tax return than on the financial statements over the 4 years.

    C. Lower profit after tax on the tax return than on the financial statements in the early years.

30. In Year 1, the company will *most likely* report a:

    A. Deferred tax liability of $30,000.

B. Deferred tax liability of $75,000.

C. Deferred tax asset of $140,000.

31. In Year 4, the company will *most likely* report a:

A. Deferred tax asset of $50,000.

B. Deferred tax liability of $65,000.

C. Deferred tax liability of $0.

Reading 31: Income Taxes

1. An increase in DTL *most likely* results in a(n):

   A. Decrease in income tax expense.

   B. Increase in current assets.

   C. Decrease in shareholders' equity

   Answer: C

   ITE = TP + Change in DTL – Change in DTA

   An increase in DTL increases ITE and results in lower net income and retained earnings.

2. A decrease in the valuation allowance *most likely* results in a(n):

   A. Increase in total assets.

   B. Decrease in shareholders' equity.

   C. Increase in income tax expense.

   Answer: A

   A decrease in the valuation allowance implies that the company's DTA (assets) are increasing. An increase in DTA reduces ITE and increases retained earnings (equity).

3. A company reports DTA of $300 million and DTL of $200 million on its balance sheet for the year ended December 2009. Tax rates from 2010 onward are brought down from 40% to 30%. In response to this change in tax rates, the decrease in the company's shareholders' equity is *closest to*:

   A. $25 million.

   B. $10 million.

   C. $75 million.

   Answer: A

   The company's DTA and DTL will fall by 25% as a result of the decrease in tax rates. On a net basis, its net assets and shareholders' equity will fall by (300 million – 200 million) × 25% = $25m.

4. Taxable temporary differences would *most likely* arise when:

   A. The carrying amount of a liability exceeds its tax base.

   B. The carrying amount of an asset exceeds its tax base.

   C. The carrying amount of an asset is less than its tax base.

   Answer: B

   Taxable temporary differences or deferred tax liabilities arise when the carrying amount of an asset is greater than its tax base or when the carrying amount of a liability is less than its tax base.

5. Deductible temporary differences *least likely* arise when:

   A. The carrying amount of a liability is less than its tax base.

   B. The carrying amount of an asset is less than its tax base.

   C. The tax base of a liability is less than its carrying amount.

   Answer: A

   Deductible temporary differences or deferred tax assets arise when the tax base of an asset exceeds its carrying value or when the tax base of a liability is less than its carrying value. When the carrying amount of a liability is less than its tax base, a deferred tax **liability** arises.

Use the following information to answer Questions 6 to 12:

ABC Company uses the straight-line method of depreciation on its financial statements to write off a piece of equipment that it purchased for $10,000. The asset has an estimated salvage value of zero and a useful life of 4 years. On the tax return it writes off the asset over 2 years with zero salvage value. The company is taxed at 30%.

6. The difference between the amount of depreciation recognized on the income statement and on the tax return will result in a:

   A. Permanent difference.

   B. Deferred tax liability.

   C. Deferred tax asset.

Answer: B

Higher depreciation expense is being recognized on the tax return and this difference in expense recognition across the income statement and the tax return is expected to reverse in the future. Therefore, a deferred tax liability will be created.

7. The carrying value of the asset on the balance sheet for Year 2 is *closest to*:

   A. \$7,500

   B. \$5,000

   C. \$2,500

   Answer: B

   The carrying value of the asset on the financial statements at the end of Year 2 is calculated as:

   Historical cost of the asset – Accumulated depreciation charged on the income statement = 10,000 – 5,000 = \$5,000

8. The tax base of the asset as of the end of Year 2 is *closest to*:

   A. \$7,500

   B. \$5,000

   C. Zero

   Answer: C

   The tax base of the asset at the end of Year 2 is calculated as:

   Historical cost of the asset – Accumulated depreciation charged on the tax return = 10,000 – 10,000 = \$0

9. The amount of DTL/DTA recognized on the balance sheet for Year 2 is *closest to*:

   A. \$2,000 DTA.

   B. \$1,500 DTL.

   C. \$1,500 DTA.

   Answer: B

DTL at the end of Year 2 are calculated as:

(Carrying value of asset – Tax base) × Tax rate = 5,000 × 0.3 = $1,500

10. The change in DTL over Year 3 is *closest to*:

    A. $750 increase.

    B. $750 decrease.

    C. $500 increase.

    Answer: B

    In Year 3, taxes payable exceed income tax expense by 2,500 × 0.3 = $750. Therefore, DTL in Year 3 will fall by $750. The temporary difference starts to reverse in Year 3.

11. The change in DTL over Year 4 is *closest to*:

    A. $750 increase.

    B. $750 decrease.

    C. $500 increase.

    Answer: B

    In Year 4, taxes payable exceed income tax expense by 2,500 × 0.3 = $750. Therefore, DTL in Year 4 falls by $750. The temporary difference entirely reversed in Year 4 and the DTL balance sheet value falls to zero.

12. For Year 3, which of the following statements is *most likely*?

    A. Income tax expense will be greater than taxes payable by $750.

    B. Income tax expense will be lower than taxes payable by $750.

    C. Income tax expense will be greater than taxes payable by $500.

    Answer: B

    In Year 3, taxes payable exceed income tax expense by 2,500 × 0.3 = $750.

13. A company had recognized a valuation allowance against a significant portion of its deferred tax assets. If the company now believes that its future profitability is set to rise it will *most likely* result in a(n):

A. Increase in the valuation allowance.

B. Increase in deferred tax assets.

C. Decrease in deferred tax liabilities.

Answer: B

An increase in the likelihood that deferred tax assets will be eventually recognized against the company's future profits will result in a decrease in the valuation allowance and an increase in deferred tax assets.

14. A company incurred $1 million in research and development costs. All of these were expensed for financial reporting, but for tax purposes these costs will be written off over 2 years. Which of the following statements is *most likely* at the end of Year 1?

    A. The tax base of the asset exceeds the carrying value by $500,000 at the end of Year 1.

    B. This is an example of a permanent difference.

    C. The tax base of the asset is lower than its carrying value by $500,000 at the end of Year 1.

    Answer: A

    The tax base of the asset exceeds the carrying value by $500,000 at the end of Year 1.

    The expenses have entirely been written off on the income statement (carrying value equals zero) while only half of the expense has been recognized on the tax return in Year 1 (tax base equals $500,000).

15. Deferred tax liabilities should be treated as equity when:

    A. They are caused by permanent differences.

    B. They are not expected to reverse.

    C. The amount of tax payments is uncertain.

    Answer: B

    Deferred tax liabilities should be treated as equity when the temporary differences that caused them to arise are not expected to reverse.

16. On the financial statements, a company recognizes the entire amount of an expense in the year it was incurred. However, for tax purposes the expense is capitalized and written-off over 3 years. This will *most likely* result in:

   A. A deferred tax asset.

   B. A deferred tax liability.

   C. Neither a deferred tax asset nor a deferred tax liability.

   Answer: A

   The carrying value of the asset will be lower than its tax base. Therefore, a deferred tax asset will arise.

17. A company received cash in Year 1 for rent revenue that will be recognized on its financial statements in Year 2. However, tax authorities tax the revenue upon receipt of cash. This will *most likely* result in:

   A. A deferred tax asset.

   B. A deferred tax liability.

   C. Neither a deferred tax asset nor a deferred tax liability.

   Answer: A

   The carrying value of the liability will be greater than its tax base. Therefore, a deferred tax asset will arise.

18. Accounting standards allow ABC Company to recognize interest income on its financial statements. However ABC is not allowed to recognize such items on its tax return. This will *most likely* result in:

   A. A deferred tax asset.

   B. A deferred tax liability.

   C. Neither a deferred tax asset nor a deferred tax liability.

   Answer: C

   When certain income or expense items are not allowed by tax legislation, permanent differences arise.

19. Tax credits that directly reduce taxes are *most likely* classified as:

A. Deferred tax assets.

B. Deferred tax liabilities.

C. Permanent differences.

Answer: C

Tax credits that directly reduce taxes are examples of permanent differences.

20. ABC Company reports the following amounts on its 2009 income statement and balance sheet:

Net income after tax: $25 million

Total assets: $400 million

Total liabilities: $300 million

Deferred tax assets: $35 million

Deferred tax liabilities: $45 million

A reduction in the statutory tax rate will *most likely:*

A. Benefit the income statement and have no effect on the balance sheet.

B. Benefit the income statement and improve the balance sheet.

C. Weaken the income statement and improve the balance sheet.

Answer: B

A reduction in the statutory tax rate will increase net profit after tax on the income statement. Further, it will reduce net deferred tax liabilities and result in an increase in net assets (equity).

21. Over the past 3 years, ABC Company has reported a steady increase in its valuation allowance. This trend *most likely* suggests that:

A. The company's future profitability prospects have diminished.

B. The company's future profitability prospects have improved.

C. The company's shareholders' equity has risen.

Answer: A

An increase in the valuation allowance suggests that ABC no longer feels that it will have sufficient taxable income to offset the deferred tax assets.

22. Given a statutory tax rate of 35%, ABC Company records taxable income of $450,000 on its 2009 tax return. It also reports an increase in net deferred tax liabilities amounting to $50,000. ABC's income tax expense for 2009 is *closest to:*

    A. $207,500

    B. $107,500

    C. $500,000

    Answer: A

    Taxes Payable = $0.35 \times 450{,}000$ = $157,500

    ITE = TP + change in DTL

    ITE = 157,500 + 50,000 = **$207,500**

23. Which of the following will *most likely* result in a deferred tax liability?

    A. Higher expenses are charged in the income statement compared to the tax return.

    B. Pretax profit is higher than taxable income.

    C. An asset's tax base is higher than its carrying value.

    Answer: B

    A deferred tax liability arises when:

    - **Lower** expenses are charged in the income statement compared to the tax return.
    - Pretax profit is higher than taxable income.
    - An asset's tax base is **lower** than its carrying value.

24. Which of the following will *least likely* result in a deferred tax asset?

    A. Taxable income is higher than pretax profit.

    B. Taxes payable are greater than income tax expense.

    C. An asset's tax base is lower than its carrying value.

    Answer: C

A deferred tax **liability** arises when an asset's tax base is lower than its carrying value.

Use the following information to answer Questions 25 to 31:

Royal Manufacturers acquires an asset for $280,000. The asset has a useful life of 4 years and an estimated salvage value of $20,000. It is expected to generate $150,000 of cash flow each year over its useful life. Royal will depreciate the asset using the double-declining balance method for tax purposes, but for financial reporting purposes, it will depreciate the asset on a straight-line basis. The company's tax rate is 40%.

25. Taxable income in Year 1 is *closest to*:

    A. $85,000

    B. $10,000

    C. $34,000

    Answer: B

    SCHEDULES:

    Tax Reporting:

Years	1 ($)	2 ($)	3 ($)	4 ($)	Total ($)
Revenue	150,000	150,000	150,000	150,000	600,000
Depreciation expense	140,000	70,000	35,000	15,000	260,000
Taxable income	10,000	80,000	115,000	135,000	340,000
Taxes payable (40%)	4,000	32,000	46,000	54,000	136,000
Profit after tax	6,000	48,000	69,000	81,000	204,000

Financial Reporting:

Years	1 ($)	2 ($)	3 ($)	4 ($)	Total ($)
Revenue	150,000	150,000	150,000	150,000	600,000
Depreciation expense	65,000	65,000	65,000	65,000	260,000

Pre-tax income	85,000	85,000	85,000	85,000	340,000
Income tax expense (40%)	34,000	34,000	34,000	34,000	136,000
Profit after tax	51,000	51,000	51,000	51,000	204,000

26. Pre-tax income in Year 2 is *closest to*:

    A. $65,000

    B. $80,000

    C. $85,000

    Answer: C

    See schedule.

27. Income tax expense in Year 3 is *closest to*:

    A. $46,000

    B. $34,000

    C. $32,000

    Answer: B

    See schedule.

28. Taxes payable in Year 4 are *closest to*:

    A. $54,000

    B. $34,000

    C. $46,000

    Answer: A

    See schedule.

29. Which of the following statements is *most accurate*?

    The company will report:

    A. Higher depreciation expense on the tax return than on the financial statements over the 4 years.

    B. Lower taxes payable on the tax return than on the financial statements over the 4 years.

C. Lower profit after tax on the tax return than on the financial statements in the early years.

Answer: C

Profit after tax for tax reporting purposes is lower in the early years and higher in the later years. Total profit after tax and total depreciation expense are the same over the life of the asset across the two statements.

30. In Year 1, the company will *most likely* report a:

A. Deferred tax liability of $30,000.

B. Deferred tax liability of $75,000.

C. Deferred tax asset of $140,000.

Answer: A

Taxes payable is $30,000 less than income tax expense. Therefore, the company will recognize a deferred tax liability of $30,000.

31. In Year 4, the company will *most likely* report a:

A. Deferred tax asset of $50,000.

B. Deferred tax liability of $65,000.

C. Deferred tax liability of $0.

Answer: C

By the end of Year 4, total income tax expense over the 4 years is the same as total taxes payable over the 4 years. Therefore, the DTL balance at the end of Year 4 equals zero.

Reading 32: Long-Term Liabilities and Leases

1. Which of the following statements is *most likely* regarding accounting for discount bonds?

   A. The book value of the liability decreases each year over the term of the bonds.

   B. Interest expense recognized exceeds the coupon payment each year over the term of the bonds.

   C. The excess of interest expense over the coupon payment serves to reduce the liability balance each year.

2. Which of the following statements is *least likely* regarding accounting for premium bonds?

   A. The book value of the liability decreases each year over the term of the bonds.

   B. Interest expense recognized is greater than the coupon payment each year over the term of the bonds.

   C. The excess of coupon payment over interest expense serves to reduce the liability balance each year.

3. Company A issued bonds with a 10-year maturity 5 years ago when market interest rates stood at 10%. Company B issues 5-year bonds today when market interest rates stand at 5%. Given that the book value of these bond-related liabilities is identical on the two companies' financial statements as of today, which of the following statements is *most likely*?

   A. Company A is better off because the economic value of its bonds is higher as interest rates have decreased.

   B. Company B is better off because the true value of its obligations is lower than that of Company A's.

   C. The economic value of Company B's liabilities is lower than the book value recognized on its balance sheet.

4. When a lease is classified as an operating lease, a non-current asset is recognized and depreciated on the:

A. Lessor's financial statements.

B. Lessee's financial statements.

C. Both the lessor and the lessee's financial statements.

5. When a lease is classified as a finance lease, a long-lived asset is recognized and depreciated on the:

A. Lessor's financial statements.

B. Lessee's financial statements.

C. Both the lessor and the lessee's financial statements.

6. Recognition of a finance lease as opposed to an operating lease by the lessor *most likely* results in:

A. Higher total net income over the lease term.

B. Higher total CFI over the lease term.

C. Lower taxes in the early years of the lease term.

7. Recognition of a finance lease as opposed to an operating lease by the lessee *least likely* results in:

A. Higher CFO.

B. Higher current liabilities.

C. Lower non-operating expenses.

8. A company issued bonds when market interest rates stood at 8%. Today market interest rates are 10%. Given that these bonds offer a coupon of 9%, the bonds were *most likely* issued at:

A. A discount to par.

B. A premium to par.

C. Par.

9. ABC Company receives $10 million for bonds carrying a coupon rate of 9%. XYZ Company receives $10 million for bonds carrying a coupon rate of 11%. Given that market interest rates at issuance for both the bonds stood at 10.5% and that both the bonds have a 10-year term to maturity, which of the following is *least likely?*

A. In Year 2, the book value of the bonds is higher on ABC's financial statements compared to XYZ's financial statements.

B. ABC records a higher outflow from operating activities each year.

C. The par value of ABC's bonds is greater than that of XYZ's bonds.

10. A company needs to raise $20 million and has a choice between issuing zero-coupon bonds or bonds with a coupon rate that is 100 basis points lower than the market interest rate at the issuance date. As the bond's maturity day approaches, the reported debt-equity ratio will *most likely*:

	Zero-coupon bond	**Coupon-bearing bond**
A.	Rise	Stay the same
B.	Fall	Fall
C.	Rise	Rise

11. A company issued 5% coupon bonds 2 years ago. Since then interest rates have risen to 6%. Which of the following is *most likely* if an analyst uses reported figures in his analysis?

A. The interest coverage ratio will be overestimated.

B. The interest coverage ratio will be underestimated.

C. The company's economic liabilities will be overestimated.

12. Which of the following is *most likely* as to whether use of the effective interest method to account for financing liabilities is required under IFRS and U.S. GAAP?

	U.S. GAAP	**IFRS**
A.	Yes	No
B.	Yes	Yes
C.	No	Yes

13. Use of the effective interest method to account for financing liabilities *most likely* results in:

A. A constant rate of interest over the bond's term.

B. An increasing rate of interest over the bond's term.

C. A decreasing rate of interest over the bond's term.

14. Printing and legal fees incurred when bonds are issued are *most likely* to be included in the measurement of the liability under:

    A. U.S. GAAP only.

    B. IFRS only.

    C. U.S. GAAP and IFRS.

15. IFRS allows interest expense to be classified under:

    A. CFO only.

    B. CFO or CFF.

    C. CFO or CFI.

16. U.S. GAAP allows interest expense to be classified under:

    A. CFO only.

    B. CFF only.

    C. CFO or CFF.

17. Which of the following is *least likely* required by debt covenants?

    A. Mandatory dividend payments

    B. Maximum levels of leverage

    C. Maintenance of pledged collateral

18. From the lessee's perspective, which of the following is *least likely* to be lower under an operating lease compared to a finance lease?

    A. Assets

    B. Current liabilities

    C. Cash

19. From the lessee's perspective, which of the following is *least likely* to be higher under an operating lease compared to a finance lease?

    A. Operating expenses

    B. Non-operating expenses

    C. Net income in the early years

20. From the lessee's perspective, which of the following is *most likely* to be higher under an operating lease compared to a finance lease?

A. CFO

B. CFI

C. CFF

Use the following information to answer Questions 21 to 23:

ABC Company leases an asset for 5 years. During the term of the lease, ABC must make a payment of $5,000 each year for using the asset. The rate implicit in the lease is 8%. ABC treats the lease as an operating lease.

21. The increase in liabilities upon inception of the lease is *closest to:*

    A. Zero

    B. $25,000

    C. $19,964

22. Assuming that ABC depreciates all its assets using the straight-line method with zero salvage value, operating and non-operating expenses in Year 3 are *closest to*:

	Operating Expenses	Non-operating Expenses
A.	$5,000	Zero
B.	$3,993	$1,031
C.	Zero	$1,031

23. The book value of the lease-related liability at the beginning of Year 3 is *closest to*:

    A. $12,885

    B. Zero

    C. $8,916

Use the following information to answer Questions 24 to 28:

XYZ Company leases an asset for 4 years. During the term of the lease, XYZ must make a payment of $8,000 each year for using the asset. The rate implicit in the lease is 7%. ABC has a bargain purchase option on the asset.

24. The increase in liabilities upon inception of the lease is *closest to:*

    A. Zero

B. $27,098

C. $32,000

25. Operating and non-operating expenses in Year 3 are *closest to*:

	Operating Expenses	**Non-operating Expenses**
A.	$8,000	Zero
B.	$6,774	$1,012
C.	Zero	$6,774

26. The book value of the lease-related liability at the beginning of Year 3 is *closest to*:

A. $14,464

B. Zero

C. $7,477

27. Lease-related current liabilities at the end of Year 1 are *closest to:*

A. $6,530

B. Zero

C. $20,995

28. Cash outflow from financing activities for Year 3 is *closest to*:

A. $8,000

B. $6,988

C. $1,470

Use the following information to answer Questions 29 to 35:

QRS Company leases out an asset for 4 years to TUV Inc. During the term of the lease, TUV must make a payment of $5,000 each year for using the asset. The rate implicit in the lease is 8%. The lease is classified as a finance lease and both companies use straight-line depreciation and zero salvage values to depreciate all fixed assets.

29. Interest income for QRS in Year 3 is *closest to*:

A. Zero

B. $713

C. $370

30. If QRS were to classify the lease as an operating lease, net income in Year 1 would *most likely*:

    A. Be lower by $860.

    B. Be higher by $2,815.

    C. Be lower by $465.

31. If QRS were to classify the lease as an operating lease, net income over the term of the lease would *most likely*:

    A. Be higher

    B. Be the same

    C. Be lower

32. If QRS were to classify the lease as an operating lease net income in Year 2 would *most likely*:

    A. Be higher by $3,675.

    B. Be lower by $171.

    C. Be the same as under a direct-finance lease.

33. If QRS were to classify the lease as an operating lease, CFO in Year 2 would *most likely*:

    A. Be higher by $3,969.

    B. Be lower by $171.

    C. Be the same as under a direct-finance lease.

34. If the asset had cost QRS $12,000, its net income in Year 1 would be *closest to*:

    A. $1,325

    B. $4,561

    C. $5,885

35. If the asset had cost QRS $14,000, its net income in Year 3 would be *closest to*:

    A. $713

B. $640

C. $1,353

Use the following information regarding Star Traders to answer Questions 36 to 39:

Star Traders issues an 8% annual coupon bond with a par value of $100,000 which will be redeemed after 4 years. Market interest rates at the time of issuance are 9%.

36. Star Traders *most likely* issued the bond at:

A. Par.

B. Discount.

C. Premium.

37. Interest expense in Year 2 is *closest to*:

A. $8,708

B. $708

C. $8,772

38. The increase in liability over Year 2 is *closest to*:

A. $708

B. $772

C. $842

39. The value of the liability at the beginning of Year 4 is *closest to*:

A. $98,241

B. $99,083

C. $100,000

Use the following information regarding Mercury Traders to answer Questions 40 to 44:

Mercury Traders issued a 12% annual coupon bond with a par value of $100,000 and a 4-year term. Market interest rates at issuance were 10%.

40. Mercury Traders *most likely* issued the bond at:

A. Par.

B. Discount.

C. Premium.

41. The change in liability over Year 2 is *closest to*:

A. −$1,503

B. $1,366

C. −$10,634

42. Interest expense for Year 3 under the effective interest method is *closest to*:

A. $10,497

B. $10,347

C. $1,653

43. The book value of the liability at the beginning of Year 4 is *closest to*:

A. $100,000

B. $103,471

C. $101,818

44. Interest expense for Year 2 under the straight-line method is *closest to*:

A. $10,415

B. $12,000

C. $10,497

45. Consider the following statements:

Statement 1: Ignoring any effects on taxes amortization of a bond premium or discount is a non-cash item.

Statement 2: If the cash flow statement is prepared using the indirect method, amortization of bond premium is added back to net income.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

46. Which of the following statements regarding pension plans is *most accurate*?

A. Under a defined-benefit plan, a company contributes an agreed-upon amount into the plan in each period.

B. Under a defined-contribution plan, the amount of cash paid by the company into the plan is treated as a financing cash outflow on the cash flow statement.

C. A defined-contribution plan may give rise to a liability on the balance sheet.

47. Under U.S. GAAP, an increase in which of the following *least likely* increases pension expense under a defined-benefit plan?

A. Interest expense

B. Expected return on plan assets

C. Service costs

48. Consider the following statements:

Statement 1: The service cost during the period for an employee is the increase in the pension benefit earned by the employee as a result of providing one more year of service.

Statement 2: Actuarial gains and losses arise due to changes in the assumptions used for calculating pension expense.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Use the following information regarding Alpha Inc and Beta Inc to answer Questions 49 to 52:

	Alpha Inc. ($ Millions)		**Beta Inc. ($ Millions)**	
	2010	**2009**	**2010**	**2009**
Short-term borrowings	2,331	3,524	4,681	1,140
Current portion of long-term	4,250	3,942	215	775

interest bearing debt				
Long-term interest bearing debt	35,675	31,422	1,464	984
Total shareholders' equity	160,250	151,250	29,625	30,450
Total assets	310,425	270,495	44,655	42,350
EBIT	17,291	35,467	10,425	14,365
Interest expense	1,919	1,729	695	255

49. Alpha Inc.'s debt-to-assets ratio for 2009 is *closest to*:

    A. 13.61%

    B. 14.38%

    C. 14.24%

50. Beta Inc.'s debt-to-capital ratio for 2010 is *closest to*:

    A. 17.67%

    B. 20.87%

    C. 8.69%

51. Which of the following statements regarding the two companies' solvency ratios is *most accurate*?

    A. Beta Inc.'s debt-to-equity ratio has declined over the 2 years.

    B. Alpha Inc. has a higher financial leverage ratio than Beta Inc.

    C. Alpha Inc.'s debt-to-equity ratio has declined over the 2 years.

52. Consider the following statements:

    Statement 1: Alpha Inc.'s interest coverage ratio has improved over the 2 years.

    Statement 2: Beta Inc. is in a better position to cover its interest payments compared to Alpha Inc.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

Use the following information to answer Questions 53 to 58:

The following disclosures regarding finance and operating leases are made by Magnus Corp. in its notes to the financial statements for 2010:

Leased Assets	**2010**		**2009**	
	Acquisition Cost ($ Millions)	**Net Book Value ($ Millions)**	**Acquisition Cost ($ Millions)**	**Net Book Value ($ Millions)**
Land and buildings	58	50	65	54
Machinery	545	224	560	345
Others	90	52	105	56
Total	**693**	**326**	**730**	**455**

Liabilities from Finance Leases ($ Millions)	**2010**			**2009**		
	Minimum Lease Payments	**Interest Portion**	**Leasing Liability**	**Minimum Lease Payments**	**Interest Portion**	**Leasing Liability**
Following Year 1	45	10	25	54	12	28
Following Year 2	55	12	30	58	14	31
Following Year 3	40	8	20	76	22	38
Over 3 years	60	16	35	72	18	36
	200	**46**	**110**	**260**	**66**	**133**

Commitments Due to Operating Lease Contracts ($ Millions)	
	Nominal Value of the Future Minimum Payments

	December 31, 2010	December 31, 2009
Less than 1 year	395	430
1-3 years	860	775
Over 3 years	790	645
	2,045	**1,850**

53. The total amounts of finance lease liabilities reported by Magnus Corp. on its balance sheet for 2009 and 2010 are *closest to*:

	2010 ($ Millions)	2009 ($ Millions)
A	200	260
B	110	133
C	356	459

54. With respect to the finance lease agreements in place at the end of 2010, the amount of Magnus Corp. finance lease commitments in 2011 is *closest to*:

A. $80 million.

B. $25 million.

C. $45 million.

55. With respect to the finance lease agreements in place at the end of 2010, the amount of interest expense that Magnus Corp. will report in 2011 is *closest to*:

A. $10 million.

B. $12 million.

C. $46 million.

56. Magnus Corp.'s total commitments under operating leases at the end of 2009 and 2010 are *closest to*:

	2010 ($ Millions)	2009 ($ Millions)
A	790	645
B	395	430

C	2,045	1,850

57. With respect to the operating lease agreements in place at the end of 2010, the minimum amount of rent expense that Magnus Corp. will report in 2011 is *closest to*:

    A. $395 million.

    B. $430 million.

    C. $2,045 million.

58. The amount of leased assets reported by Magnus Corp. at the end of 2010 is *closest to*:

    A. $693 million.

    B. $326 million.

    C. $730 million.

Use the following information to answer Questions 59 to 62:

Following are some of the excerpts from disclosures made by Gamma Corp. regarding its long-term debt in its 2010 financial statements:

Note 11 (excerpt)

The components of long-term debt are as follows:

$ Millions	**2010**	**Effective Rate %**	**2009**	**Effective Rate %**
4.5% Debentures due 2015	455		450	7.0%
5.35% Debentures due 2022			795	5.35%
4.25% Notes due 2018	1,391	4.95%	1,347	4.95%

Note 23: Debentures Payable (excerpt)

On March 31, 2010, the company issued 2.5%, $100 par convertible bonds with stock warrants due 2022 with an aggregate principal amount of $24 billion. Each lot of 5 bonds is entitled to warrants to subscribe 40 shares of the company at an initial exercise price of $22.

59. The effective interest rate for 2010 for 4.5% Debentures due 2015 is

closest to:

A. 4.5%

B. 7.0%

C. 5.35%

60. The carrying amount of 5.35% Debentures due 2022 in 2010 is *closest to*:

A. \$855 million.

B. \$455 million.

C. \$795 million.

61. The 4.25% Notes due 2018 were *most likely* issued at:

A. A premium.

B. A discount.

C. Par.

62. The number of shares issued if all warrants are exercised is *closest to*:

A. 1.92 billion.

B. 9.6 billion.

C. 87.27 million.

Reading 32: Long-Term Liabilities and Leases

1. Which of the following statements is *most likely* regarding accounting for discount bonds?

   A. The book value of the liability decreases each year over the term of the bonds.

   B. Interest expense recognized exceeds the coupon payment each year over the term of the bonds.

   C. The excess of interest expense over the coupon payment serves to reduce the liability balance each year.

   Answer: B

   For bonds issued at a discount:

   - Interest expense exceeds the coupon payment due to discount amortization.
   - The book value of the liability increases each year and the shortfall of the coupon payment compared to interest expense serves to increase the liability balance each year.

2. Which of the following statements is *least likely* regarding accounting for premium bonds?

   A. The book value of the liability decreases each year over the term of the bonds.

   B. Interest expense recognized is greater than the coupon payment each year over the term of the bonds.

   C. The excess of coupon payment over interest expense serves to reduce the liability balance each year.

   Answer: B

   For bonds issued at a premium:

   interest expense is less than the coupon payment due to premium amortization. The book value of the liability falls each year, and the excess of the coupon payment over interest expense serves to reduce the liability balance each year.

3. Company A issued bonds with a 10-year maturity 5 years ago when market interest rates stood at 10%. Company B issues 5-year bonds today when market interest rates stand at 5%. Given that the book value of these bond-related liabilities is identical on the two companies' financial statements as of today, which of the following statements is *most likely*?

   A. Company A is better off because the economic value of its bonds is higher as interest rates have decreased.

   B. Company B is better off because the true value of its obligations is lower than that of Company A's.

   C. The economic value of Company B's liabilities is lower than the book value recognized on its balance sheet.

   Answer: B

   Interest rates have fallen significantly since the time that Company A issued its bonds. Therefore, the actual value of Company A's obligations (liabilities) is higher than reflected on its financial statements. The book value of bonds on Company B's balance sheet is the same as their actual value as they were issued today.

4. When a lease is classified as an operating lease, a non-current asset is recognized and depreciated on the:

   A. Lessor's financial statements.

   B. Lessee's financial statements.

   C. Both the lessor and the lessee's financial statements.

   Answer: A

   When a lease is classified as an operating lease, a non-current asset is recognized and depreciated on the lessor's financial statements. No asset is recognized on the lessee's financial statements.

5. When a lease is classified as a finance lease, a long-lived asset is recognized and depreciated on the:

   A. Lessor's financial statements.

   B. Lessee's financial statements.

   C. Both the lessor and the lessee's financial statements.

Answer: B

When a lease is classified as a finance lease, a long-lived asset is recognized and depreciated on the lessee's financial statements. The lessor removes the long-lived asset from its books and recognizes a lease-receivable asset.

6. Recognition of a finance lease as opposed to an operating lease by the lessor *most likely* results in:

   A. Higher total net income over the lease term.

   B. Higher total CFI over the lease term.

   C. Lower taxes in the early years of the lease term.

   Answer: B

   Recognition of a finance lease as opposed to an operating lease by the lessor results in the same total net income, higher total CFI over the lease term, and higher taxes in the early years of the lease.

7. Recognition of a finance lease as opposed to an operating lease by the lessee *least likely* results in:

   A. Higher CFO.

   B. Higher current liabilities.

   C. Lower non-operating expenses.

   Answer: C

   Recognition of a finance lease as opposed to an operating lease by the lessee results in higher CFO, higher current liabilities, and higher non-operating expenses (interest expense).

8. A company issued bonds when market interest rates stood at 8%. Today market interest rates are 10%. Given that these bonds offer a coupon of 9%, the bonds were *most likely* issued at:

   A. A discount to par.

   B. A premium to par.

   C. Par.

   Answer: B

   Since market interest rates at issuance were lower than the coupon rate offered, the bonds were issued at a premium.

9. ABC Company receives \$10 million for bonds carrying a coupon rate of 9%. XYZ Company receives \$10 million for bonds carrying a coupon rate of 11%. Given that market interest rates at issuance for both the bonds stood at 10.5% and that both the bonds have a 10-year term to maturity, which of the following is *least likely?*

   A. In Year 2, the book value of the bonds is higher on ABC's financial statements compared to XYZ's financial statements.

   B. ABC records a higher outflow from operating activities each year.

   C. The par value of ABC's bonds is greater than that of XYZ's bonds.

   Answer: B

   ABC issues bonds at a discount to par (coupon rate is less than the market interest rate) and XYZ issues bonds at a premium (coupon rate is more than the market interest rate). Therefore:

   - The par value of ABC's bonds is higher than that of XYZ's.
   - Over the term of the bonds, ABC will recognize an increasing value of the liability each year while XYZ will record a decreasing value of the liability. In Year 2, the book value of the liability will be higher on ABC's financial statements.
   - No definitive statement can be made about coupon payments. All we know is that the par value of ABC's bonds is greater, but XYZ's bonds carry a higher coupon rate.

10. A company needs to raise \$20 million and has a choice between issuing zero-coupon bonds or bonds with a coupon rate that is 100 basis points lower than the market interest rate at the issuance date. As the bond's maturity day approaches, the reported debt-equity ratio will *most likely*:

	Zero-coupon bond	**Coupon-bearing bond**
A.	Rise	Stay the same
B.	Fall	Fall
C.	Rise	Rise

Answer: C

The book value of the liability rises over the term of the bond for both zero-coupon and coupon-bearing bonds that are issued at a discount. Therefore, the reported debt-equity ratio rises.

11. A company issued 5% coupon bonds 2 years ago. Since then interest rates have risen to 6%. Which of the following is *most likely* if an analyst uses reported figures in his analysis?

    A. The interest coverage ratio will be overestimated.

    B. The interest coverage ratio will be underestimated.

    C. The company's economic liabilities will be overestimated.

    Answer: C

    The interest coverage ratio is unaffected by the rise in market interest rates since the time of issuance. The market value of the firm's liabilities would fall as a result of the rise in interest rates, and therefore using the reported number for liabilities would overestimate the firm's economic liabilities.

12. Which of the following is *most likely* as to whether use of the effective interest method to account for financing liabilities is required under IFRS and U.S. GAAP?

	U.S. GAAP	**IFRS**
A.	Yes	No
B.	Yes	Yes
C.	No	Yes

    Answer: C

    The effective interest method is required under IFRS and **preferred** under U.S. GAAP.

13. Use of the effective interest method to account for financing liabilities *most likely* results in:

    A. A constant rate of interest over the bond's term.

    B. An increasing rate of interest over the bond's term.

    C. A decreasing rate of interest over the bond's term.

    Answer: A

The effective interest method results in a constant rate of interest over the bond's term.

14. Printing and legal fees incurred when bonds are issued are *most likely* to be included in the measurement of the liability under:

    A. U.S. GAAP only.

    B. IFRS only.

    C. U.S. GAAP and IFRS.

    Answer: B

    Printing and legal fees incurred when bonds are issued are included in the measurement of the liability under IFRS.

    Under U.S. GAAP these costs are typically capitalized and written off over the bond's term.

15. IFRS allows interest expense to be classified under:

    A. CFO only.

    B. CFO or CFF.

    C. CFO or CFI.

    Answer: B

    Under IFRS, interest payments on bonds may be classified as CFO or CFF.

16. U.S. GAAP allows interest expense to be classified under:

    A. CFO only.

    B. CFF only.

    C. CFO or CFF.

    Answer: A

    Under U.S. GAAP, interest payments on bonds may be classified as CFO only.

17. Which of the following is *least likely* required by debt covenants.

    A. Mandatory dividend payments

    B. Maximum levels of leverage

C. Maintenance of pledged collateral

Answer: A

Debt covenants typically put restrictions on dividend payments, they do not require the company to pay out dividends to shareholders.

18. From the lessee's perspective, which of the following is *least likely* to be lower under an operating lease compared to a finance lease?

A. Assets

B. Current liabilities

C. Cash

Answer: C

Cash is the same regardless of the classification of a lease by the lessee.

19. From the lessee's perspective, which of the following is *least likely* to be higher under an operating lease compared to a finance lease?

A. Operating expenses

B. Non-operating expenses

C. Net income in the early years

Answer: B

No non-operating expenses are recognized by the lessee under an operating lease. Under a finance lease interest expense is classified as a non-operating expense.

20. From the lessee's perspective, which of the following is *most likely* to be higher under an operating lease compared to a finance lease?

A. CFO

B. CFI

C. CFF

Answer: C

CFF is higher under an operating lease as the entire lease payment is an outflow from operating activities.

Use the following information to answer Questions 21 to 23:

ABC Company leases an asset for 5 years. During the term of the lease, ABC must make a payment of $5,000 each year for using the asset. The rate implicit in the lease is 8%. ABC treats the lease as an operating lease.

21. The increase in liabilities upon inception of the lease is *closest to:*

    A. Zero

    B. $25,000

    C. $19,964

    Answer: A

    There are no effects on the balance sheet of the lessee if the lease is classified as an operating lease.

22. Assuming that ABC depreciates all its assets using the straight-line method with zero salvage value, operating and non-operating expenses in Year 3 are *closest to*:

	Operating Expenses	**Non-operating Expenses**
A.	$5,000	Zero
B.	$3,993	$1,031
C.	Zero	$1,031

    Answer: A

    In an operating lease, the entire lease payment is classified as an operating expense. There is no interest (non-operating) expense.

23. The book value of the lease-related liability at the beginning of Year 3 is *closest to*:

    A. $12,885

    B. Zero

    C. $8,916

    Answer: B

    In an operating lease no liability is recognized on the balance sheet.

Use the following information to answer Questions 24 to 28:

XYZ Company leases an asset for 4 years. During the term of the lease, XYZ must make a payment of $8,000 each year for using the asset. The rate implicit in the lease is 7%. ABC has a bargain purchase option on the asset.

24. The increase in liabilities upon inception of the lease is *closest to:*

    A. Zero

    B. $27,098

    C. $32,000

    Answer: B

    XYZ must classify the lease as a finance lease because it holds a bargain purchase option on the asset. The present value of lease payments is recognized as a liability at the inception of the lease for a finance lease.

    PMT = −$8,000: N = 4; I/Y = 7; CPT PV; PV = $27,097.69

25. Operating and non-operating expenses in Year 3 are *closest to*:

	Operating Expenses	Non-operating Expenses
A.	$8,000	Zero
B.	$6,774	$1,012
C.	Zero	$6,774

Answer: B

In a finance lease, depreciation is classified as an operating expense, while interest expense is classified as a non-operating expense.

YEARS	ANNUAL LEASE PAYMENTS ($)	INTEREST EXPENSE (7%) ($)	REDUCTION OF LEASE OBLIGATION ($)	BALANCE ($)
0	-	-	-	27,097.69
1	8,000	1,896.84	6,103.16	20,994.53
2	8,000	1,469.62	6,530.38	14,464.15
3	8,000	1,012.49	6,987.51	7,476.64
4	8,000	523.36	7,476.64	-

26. The book value of the lease-related liability at the beginning of Year 3 is *closest to*:

A. $14,464

B. Zero

C. $7,477

Answer: A

YEARS	ANNUAL LEASE PAYMENTS ($)	INTEREST EXPENSE (7%) ($)	REDUCTION OF LEASE OBLIGATION ($)	BALANCE ($)
0	-	-	-	27,097.69
1	8,000	1,896.84	6,103.16	20,994.53
2	8,000	1,469.62	6,530.38	**14,464.15**
3	8,000	1,012.49	6,987.51	7,476.64
4	8,000	523.36	7,476.64	-

27. Lease-related current liabilities at the end of Year 1 are *closest to:*

A. $6,530

B. Zero

C. $20,995

Answer: A

The reduction in lease liability over Year 2 is classified as a current liability at the end of Year 1.

28. Cash outflow from financing activities for Year 3 is *closest to*:

A. $8,000

B. $6,988

C. $1,470

Answer: B

The reduction in lease liability is classified as an outflow from financing activities.

Use the following information to answer Questions 29 to 35:

QRS Company leases out an asset for 4 years to TUV Inc. During the term of the lease, TUV must make a payment of $5,000 each year for using the asset. The rate implicit in the lease is 8%. The lease is classified as a finance lease and both companies use straight-line depreciation and zero salvage values to depreciate all fixed assets.

29. Interest income for QRS in Year 3 is *closest to*:

   A. Zero

   B. $713

   C. $370

   Answer: B

   Lease Amortization Schedule:

YEARS	ANNUAL LEASE PAYMENTS RECEIVED ($)	INTEREST INCOME (8%) ($)	REDUCTION OF LEASE RECEIVABLE ($)	BALANCE ($)
0	-	-	-	16,560.63
1	5,000	1,324.85	3,675.15	12,885.48
2	5,000	1,030.84	3,969.16	8,916.32
3	5,000	713.31	4,286.69	4,629.63
4	5,000	370.37	4,629.63	-

   Net Income Schedule:

YEARS	ANNUAL LEASE PAYMENTS RECEIVED ($)	DEPRECIATION EXPENSE ($)	NET INCOME ($)
1	5,000	4,140.16	859.84
2	5,000	4,140.16	859.84
3	5,000	4,140.16	859.84
4	5,000	4,140.16	859.84

30. If QRS were to classify the lease as an operating lease, net income in Year 1 would *most likely*:

A. Be lower by $860.

B. Be higher by $2,815.

C. Be lower by $465.

Answer: C

In an operating lease net income would equal $859.84 (lease payment – depreciation expense).

In a direct financing lease, net income would equal $1,324.85.

The difference between the two equals $465.01.

31. If QRS were to classify the lease as an operating lease, net income over the term of the lease would *most likely*:

A. Be higher.

B. Be the same.

C. Be lower.

Answer: B

Net income over the term of the lease would be the same ($3,439).

32. If QRS were to classify the lease as an operating lease, net income in Year 2 would *most likely*:

A. Be higher by $3,675.

B. Be lower by $171.

C. Be the same as under a direct-finance lease.

Answer: B

Net income in Year 2:

Operating lease: $860 (lease payment – depreciation)

Direct-financing lease: $1,031 (interest income)

33. If QRS were to classify the lease as an operating lease, CFO in Year 2 would *most likely*:

A. Be higher by $3,969.

B. Be lower by $171.

C. Be the same as under a direct-finance lease.

Answer: A

CFO in Year 2:

Operating lease: $5,000

Direct-financing lease: $1,030.84 (interest income)

34. If the asset had cost QRS $12,000, its net income in Year 1 would be *closest to*:

 A. $1,325

 B. $4,561

 C. $5,885

 Answer: C

 Since the cost of the asset is lower than the present value of lease payments, QRS would recognize gross profit on sale ($4,560.63) and interest income in Year 1 ($1,324,85).

35. If the asset had cost QRS $14,000, its net income in Year 3 would be *closest to*:

 A. $713

 B. $640

 C. $1,353

 Answer: A

 Gross profit on sale is only recognized in Year 1. Only interest income would be recognized on the income statement in Year 3.

Use the following information regarding Star Traders to answer Questions 36 to 39:

Star Traders issues an 8% annual coupon bond with a par value of $100,000 which will be redeemed after 4 years. Market interest rates at the time of issuance are 9%.

36. Star Traders *most likely* issued the bond at:

 A. Par.

 B. Discount.

 C. Premium.

Answer: B

The bond's coupon rate is **less** than the market rate at issuance. Therefore, the bond is issued at a discount.

37. Interest expense in Year 2 is *closest to*:

A. $8,708

B. $708

C. $8,772

Answer: C

Year	Beginning liability ($)	Interest expense ($)	Coupon payment ($)	Change in liability ($)	Closing liability ($)
0					96,760.28
1	96,760.28	8,708.43	8,000.00	708.43	97,468.71
2	97,468.71	8,772.18	8,000.00	772.18	98,240.89
3	98,240.89	8,841.68	8,000.00	841.68	99,082.57
4	99,082.57	8,917.43	8,000.00	917.43	100,000.00

38. The increase in liability over Year 2 is *closest to*:

A. $708

B. $772

C. $842

Answer: B

See schedule.

39. The value of the liability at the beginning of Year 4 is *closest to*:

A. $98,241

B. $99,083

C. $100,000

Answer: B

See schedule.

Use the following information regarding Mercury Traders to answer Questions 40 to 44:

Mercury Traders issued a 12% annual coupon bond with a par value of $100,000 and a 4-year term. Market interest rates at issuance were 10%.

40. Mercury Traders *most likely* issued the bond at:

    A. Par.

    B. Discount.

    C. Premium.

    Answer: C

    The bond's coupon rate is greater than the market rate at issuance. Therefore, the bond was issued at a premium.

41. The change in liability over Year 2 is *closest to*:

    A. −$1,503

    B. $1,366

    C. −$10,634

    Answer: A

Years	Beginning liability ($)	Interest expense ($)	Coupon payment ($)	Change in liability ($)	Closing liability ($)
0					106,339.73
1	106,339.73	10,633.97	12,000.00	−1,366.03	104,973.70
2	104,973.70	10,497.37	12,000.00	−1,502.63	103,471.07
3	103,471.07	10,347.11	12,000.00	−1,652.89	101,818.18
4	101,818.18	10,181.82	12,000.00	−1,818.18	100,000.00

42. Interest expense for Year 3 under the effective interest method is *closest to*:

    A. $10,497

    B. $10,347

    C. $1,653

Answer: B

See schedule.

43. The book value of the liability at the beginning of Year 4 is *closest to*:

A. \$100,000

B. \$103,471

C. \$101,818

Answer: C

44. Interest expense for Year 2 under the straight-line method is *closest to*:

A. \$10,415

B. \$12,000

C. \$10,497

Answer: A

Under the straight line method, the bond premium is amortized evenly across the bond's term. The amount of premium amortized each year equals \$6,339.73/4 = \$1,584.93.

Therefore, annual interest expense = 12,000 – 1,584.93 = \$10,415.07

45. Consider the following statements:

Statement 1: Ignoring any effects on taxes amortization of a bond premium or discount is a non-cash item.

Statement 2: If the cash flow statement is prepared using the indirect method, amortization of bond premium is added back to net income.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

If the cash flow statement is prepared using the indirect method, amortization of bond premium is deducted from net income.

46. Which of the following statements regarding pension plans is *most*

accurate?

A. Under a defined-benefit plan, a company contributes an agreed-upon amount into the plan in each period.

B. Under a defined-contribution plan, the amount of cash paid by the company into the plan is treated as a financing cash outflow on the cash flow statement.

C. A defined-contribution plan may give rise to a liability on the balance sheet.

Answer: C

Under a defined-contribution plan, a company contributes an agreed-upon amount into the plan. The amount of cash paid by the company into the plan is treated as an operating cash outflow on the cash flow statement.

The only impact on the balance sheet is a decrease in cash; however, if the agreed-upon amount is not deposited into the plan during a particular period, the outstanding amount is recognized as a liability.

47. Under U.S. GAAP, an increase in which of the following *least likely* increases pension expense under a defined-benefit plan?

A. Interest expense

B. Expected return on plan assets

C. Service costs

Answer: B

Expected return on plan assets is subtracted to arrive at pension expense for a defined-benefit plan.

48. Consider the following statements:

Statement 1: The service cost during the period for an employee is the increase in the pension benefit earned by the employee as a result of providing one more year of service.

Statement 2: Actuarial gains and losses arise due to changes in the assumptions used for calculating pension expense.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

The service cost during the period for an employee is the **present value** of the increase in the pension benefit earned by the employee as a result of providing one more year of service.

Use the following information regarding Alpha Inc. and Beta Inc. to answer Questions 49 to 52:

	Alpha Inc. ($ Millions)		**Beta Inc. ($ Millions)**	
	2010	**2009**	**2010**	**2009**
Short-term borrowings	2,331	3,524	4,681	1,140
Current portion of long-term interest bearing debt	4,250	3,942	215	775
Long-term interest bearing debt	35,675	31,422	1,464	984
Total shareholders' equity	160,250	151,250	29,625	30,450
Total assets	310,425	270,495	44,655	42,350
EBIT	17,291	35,467	10,425	14,365
Interest expense	1,919	1,729	695	255

49. Alpha Inc.'s debt-to-assets ratio for 2009 is *closest to*:

A. 13.61%

B. 14.38%

C. 14.24%

Answer: B

Debt-to-assets ratio = Total debt / Total assets

Debt-to-assets ratio = (3,524 + 3,942 + 31,422) / 270,495 = 14.38%

50. Beta Inc.'s debt-to-capital ratio for 2010 is *closest to*:

A. 17.67%

B. 20.87%

C. 8.69%

Answer: A

Debt-to-capital ratio = Total debt / (Total debt + Total shareholders' equity)

Debt-to-capital ratio = (4,681 + 215 + 1,464) / (4,681 + 215 + 1,464 + 29,625) = 17.67%

51. Which of the following statements regarding the two companies' solvency ratios is *most accurate*?

A. Beta Inc.'s debt-to-equity ratio has declined over the 2 years.

B. Alpha Inc. has a higher financial leverage ratio than Beta Inc.

C. Alpha Inc.'s debt-to-equity ratio has declined over the 2 years.

Answer: B

Alpha Inc.

Debt-to-equity ratio = Total debt / Total shareholders' equity

Debt-to-equity ratio for 2009 = (3,524 + 3,942 + 31,422) / 151,250 = 25.71%

Debt-to-equity ratio for 2010 = (2,331 + 4,250 + 35,675) / 160,250 = 26.37%

Financial leverage ratio = Average total assets / Average shareholders' equity

Financial leverage ratio = [(310,425 + 270,495)/2] / [(160,250 + 151,250)/2] = 1.8649

Beta Inc.

Debt-to-equity ratio for 2009 = (1,140 + 775 + 984) / 30,450 = 9.52%

Debt-to-equity ratio for 2010 = (4,681 + 215 + 1,464) / 29,625 = 21.47%

Financial leverage ratio = [(44,655 + 42,350)/2] / [(29,625 + 30,450)/2] = 1.4483

52. Consider the following statements:

Statement 1: Alpha Inc.'s interest coverage ratio has improved over the 2 years.

Statement 2: Beta Inc. is in a better position to cover its interest payments compared to Alpha Inc.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

Alpha Inc.

Interest coverage ratio for 2009 = EBIT / Interest payments

Interest coverage ratio for 2009 = 35,467 / 1,729 = 20.51

Interest coverage ratio for 2010 = 17,291 / 1,919 = 9.01

Beta Inc.

Interest coverage ratio for 2010 = 10,425 / 695 = 15

Use the following information to answer Questions 53 to 58:

The following disclosures regarding finance and operating leases are made by Magnus Corp. in its notes to the financial statements for 2010:

Leased Assets	**2010**		**2009**	
	Acquisition Cost ($ Millions)	**Net Book Value ($ Millions)**	**Acquisition Cost ($ Millions)**	**Net Book Value ($ Millions)**
Land and buildings	58	50	65	54
Machinery	545	224	560	345
Others	90	52	105	56
Total	**693**	**326**	**730**	**455**

Liabilities from Finance Leases ($	**2010**			**2009**		
	Minimum Lease	**Interest Portion**	**Leasing Liability**	**Minimum Lease**	**Interest Portion**	**Leasing Liability**

Millions)	Payments			Payments		
Following Year 1	45	10	25	54	12	28
Following Year 2	55	12	30	58	14	31
Following Year 3	40	8	20	76	22	38
Over 3 years	60	16	35	72	18	36
	200	**46**	**110**	**260**	**66**	**133**

Commitments Due to Operating Lease Contracts ($ Millions)		
	Nominal Value of the Future Minimum Payments	
	December 31, 2010	**December 31, 2009**
Less than 1 year	395	430
1-3 years	860	775
Over 3 years	790	645
	2,045	**1,850**

53. The total amounts of finance lease liabilities reported by Magnus Corp. on its balance sheet for 2009 and 2010 are *closest to*:

	2010 ($ Millions)	**2009 ($ Millions)**
A	200	260
B	110	133
C	356	459

Answer: B

The total amounts of finance lease liabilities are the total of the “Lease liability” column in the “Liabilities from finance leases” table. The amount recognized as a liability equals the present value of minimum lease payments.

54. With respect to the finance lease agreements in place at the end of 2010, the amount of Magnus Corp. finance lease commitments in 2011 is *closest to*:

    A. $80 million.

    B. $25 million.

    C. $45 million.

    Answer: C

    This is reported in the 2010 column “Minimum lease payments” row “Following Year 1” in the “Liabilities from finance leases” table.

55. With respect to the finance lease agreements in place at the end of 2010, the amount of interest expense that Magnus Corp. will report in 2011 is *closest to*:

    A. $10 million.

    B. $12 million.

    C. $46 million.

    Answer: A

    This is reported in the 2010 column “Interest portion” row “Following Year 1” in the “Liabilities from finance leases” table.

56. Magnus Corp.’s total commitments under operating leases at the end of 2009 and 2010 are *closest to*:

	2010 ($ Millions)	2009 ($ Millions)
A	790	645
B	395	430
C	2,045	1,850

Answer: C

These are the totals of the 2009 and 2010 columns “Nominal value of the future minimum payments” in the “Commitments due to operating lease contracts” table.

57. With respect to the operating lease agreements in place at the end of 2010, the minimum amount of rent expense that Magnus Corp. will report in 2011 is *closest to*:

A. $395 million.

B. $430 million.

C. $2,045 million.

Answer: A

This is reported in the 2010 column "Nominal value of the future minimum payments," row "Less than 1 year" in the "Commitments due to operating lease contracts" table.

58. The amount of leased assets reported by Magnus Corp. at the end of 2010 is *closest to*:

A. $693 million.

B. $326 million.

C. $730 million.

Answer: B

This is the total of the 2010 column "Net book value" in the "Leased asset" table.

Use the following information to answer Questions 59 to 62:

Following are some of the excerpts from disclosures made by Gamma Corp. regarding its long-term debt in its 2010 financial statements:

Note 11 (excerpt)

The components of long-term debt are as follows:

$ Millions	2010	Effective Rate %	2009	Effective Rate %
4.5% Debentures due 2015	455		450	7.0%
5.35% Debentures due 2022			795	5.35%
4.25% Notes due 2018	1,391	4.95%	1,347	4.95%

Note 23: Debentures Payable (excerpt)

On March 31, 2010, the company issued 2.5%, $100 par convertible bonds with stock warrants due 2022 with an aggregate principal amount of $24 billion. Each lot of 5 bonds is entitled to warrants to subscribe 40 shares of the company at an initial exercise price of $22.

59. The effective interest rate for 2010 for 4.5% Debentures due 2015 is *closest to*:

    A. 4.5%

    B. 7.0%

    C. 5.35%

    Answer: B

    The effective interest rate is the market interest rate at the time the bonds are issued and therefore, does not vary from year to year.

60. The carrying amount of 5.35% Debentures due 2022 in 2010 is *closest to*:

    A. $855 million.

    B. $455 million.

    C. $795 million.

    Answer: C

    The effective interest rate at which the 5.35% Debentures due 2022 were issued is the same as the coupon rate, which implies that they were issued at par. Therefore, the carrying amount of the Debentures in 2010 is the same as that in 2009 (i.e., $795 million).

61. The 4.25% Notes due 2018 were *most likely* issued at:

    A. A premium.

    B. A discount.

    C. Par.

    Answer: B

    The carrying value of these bonds has risen from 2009 to 2010, and the effective interest rate on them is greater than their coupon rate. We can therefore conclude that the bonds were issued at a discount to par.

62. The number of shares issued if all warrants are exercised is *closest to*:

A. 1.92 billion.

B. 9.6 billion.

C. 87.27 million.

Answer: A

$$\text{Number of shares issued} = \frac{\text{Aggregate principal amount}}{\text{Par value of a lot}} \times \text{Shares issued per lot}$$

$$\text{Number of shares issued} = \frac{24,000,000,000}{100 \times 5} \times 40 = 1,920,000,000 \text{ shares}$$

Reading 33: Financial Reporting Quality

1. Consider the following statements:

   Statement 1: Aggressive accounting choices are more likely than conservative accounting choices to give rise to a sustainability issue.

   Statement 2: Financial reporting quality is a prerequisite for assessing earnings quality.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

2. Conservative accounting choices are *least* likely to:

   A. Decrease reported revenue.

   B. Decrease reported operating cash flow.

   C. Decrease reported debt in the current period.

3. A company defers certain R&D expenditure until the next accounting period in order to improve reported performance for the current year. This is *most* likely an example of managing earnings via:

   A. Real actions.

   B. Accounting choices.

   C. Fictitious transactions.

4. Which of the following is *least* likely a benefit of conservative accounting?

   A. Given asymmetrical information, conservatism can protect contracting parties with less information and higher risk.

   B. Conservatism reduces the possibility of litigation.

   C. Conservative results in higher financial reporting quality.

5. The strategy of manipulating a company's income statement to make

poor results look even worse *most* likely refers to:

A. Big bath behavior.

B. Cookie jar reserve accounting.

C. Channel stuffing.

6. The practice of creating a liability when a company incurs an expense that cannot be directly linked to a specific accounting period *most* likely refers to:

   A. Big bath behavior.

   B. Cookie jar reserve accounting.

   C. Bill-and-hold sales.

7. Consider the following statements:

   Statement 1: Higher financial reporting quality typically leads to a higher cost of capital.

   Statement 2: Typically, it is the responsibility of the auditor to ensure that a company has not engaged in fraud in the preparation of its financial statements.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

8. Which of the following is *least* likely under US GAAP for a company that uses a non-GAAP financial measure in an SEC filing?

   A. The company must present the most directly comparable GAAP measure with more prominence.

   B. The company must provide a reconciliation of the non-GAAP measure and the equivalent GAAP measure.

   C. The company must explain why it believes that the non-GAAP financial measure provides useful information regarding the company's financial condition and operations.

9. Consider the following statements:

Statement 1: A ratio of accounts payable to revenues that is abnormally low relative to the industry suggests that channel stuffing may have occurred.

Statement 2: If there is an overabundance of orders in the current period, a company may set shipping terms as FOB destination as opposed to FOB shipping point in order to avoid raising investor expectations.

Which of the following is most likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

10. Consider the following statements:

Statement 1: A fully reserved tax asset suggests that management is pessimistic about the company's future prospects.

Statement 2: An increase in the valuation allowance increases net income.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

11. An increase in inventory levels with no accompanying increase in sales *least* likely indicates:

A. Inefficient inventory management.

B. Inventory is obsolete.

C. LIFO liquidation.

12. Which of the following is *least* likely a motivation to issue low-quality financial reports?

A. Poor corporate internal controls.

B. Management seeking to increase incentive pay.

C. Management looking to remove doubts over the company's ability to raise funds in the future.

13. Consider the following statements:

    Statement 1: Motivations relating to trade effects tend to be stronger than those related to equity market effects.

    Statement 2: Motivations relating to trade effects tend to be more important for smaller companies.

    Which of the following is *most* likely?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are incorrect.

Reading 33: Financial Reporting Quality

1. Consider the following statements:

   Statement 1: Aggressive accounting choices are more likely than conservative accounting choices to give rise to a sustainability issue.

   Statement 2: Financial reporting quality is a prerequisite for assessing earnings quality.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: C

   Aggressive accounting choices in the current period can lead to depressed performance in future periods, giving rise to a sustainability issue. Conservative choices in the current period lead to improved performance going forward. Therefore, they do not result in a sustainability issue.

   Earnings quality cannot be evaluated until there is some assurance regarding the quality of financial reporting.

2. Conservative accounting choices are *least* likely to:

   A. Decrease reported revenue.

   B. Decrease reported operating cash flow.

   C. Decrease reported debt in the current period.

   Answer: C

   Conservative accounting choices would likely result in an increase in debt reported in the current period.

3. A company defers certain R&D expenditure until the next accounting period in order to improve reported performance for the current year. This is *most* likely an example of managing earnings via:

A. Real actions.

B. Accounting choices.

C. Fictitious transactions.

Answer: A

This is an example of managing earnings by taking real actions.

4. Which of the following is *least* likely a benefit of conservative accounting?

   A. Given asymmetrical information, conservatism can protect contracting parties with less information and higher risk.

   B. Conservatism reduces the possibility of litigation.

   C. Conservative results in higher financial reporting quality.

   Answer: C

   Conservatism in accounting standards can impair the relevance of financial statements. When it comes to financial reporting, the ideal situation would be if financial reporting were **unbiased** i.e., neither conservative nor aggressive

5. The strategy of manipulating a company's income statement to make poor results look even worse *most* likely refers to:

   A. Big bath behavior.

   B. Cookie jar reserve accounting.

   C. Channel stuffing.

   Answer: A

   Big bath behavior refers to the strategy of manipulating a company's income statement to make poor results look even worse. The big bath is often implemented in a bad year with a view to inflating subsequent period earnings. New management teams sometimes use the big bath so that poor current performance can be blamed on previous management, while they take credit for the impressive growth that follows in subsequent periods.

6. The practice of creating a liability when a company incurs an expense that cannot be directly linked to a specific accounting period *most*

likely refers to:

A. Big bath behavior.

B. Cookie jar reserve accounting.

C. Bill-and-hold sales.

Answer: B

Cookie jar reserve accounting refers to the practice of creating a liability when a company incurs an expense that cannot be directly linked to a specific accounting period. Companies may recognize such expenses in periods during which profits are high, as they can afford to take the hit to income, with a view to reducing the liability (the reserve) in future periods during which the company may struggle. The practice results in smoothing of income over time.

7. Consider the following statements:

   Statement 1: Higher financial reporting quality typically leads to a higher cost of capital.

   Statement 2: Typically, it is the responsibility of the auditor to ensure that a company has not engaged in fraud in the preparation of its financial statements.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: C

   Higher financial reporting quality typically leads to a **lower** long-term cost of capital.

   Typically, the aim of an audit is not to look for fraud; it is to verify that financial reports are fairly presented.

8. Which of the following is *least* likely under US GAAP for a company that uses a non-GAAP financial measure in an SEC filing?

   A. The company must present the most directly comparable GAAP measure with more prominence.

B. The company must provide a reconciliation of the non-GAAP measure and the equivalent GAAP measure.

C. The company must explain why it believes that the non-GAAP financial measure provides useful information regarding the company's financial condition and operations.

Answer: A

If a company uses a non-GAAP financial measure in an SEC filing, it must display the most directly comparable GAAP measure with **equal** prominence.

9. Consider the following statements:

Statement 1: A ratio of accounts payable to revenues that is abnormally low relative to the industry suggests that channel stuffing may have occurred.

Statement 2: If there is an overabundance of orders in the current period, a company may set shipping terms as FOB destination as opposed to FOB shipping point in order to avoid raising investor expectations.

Which of the following is most likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

A ratio of accounts **receivable** to revenues that is abnormally low relative to the industry may suggest that channel stuffing has occurred.

For shipments toward the end of the reporting period, management may set shipping terms as FOB destination. Management may engage in this practice if there was an overabundance of orders during the current period, and it does not want investors/analysts to get too optimistic.

10. Consider the following statements:

Statement 1: A fully reserved tax asset suggests that management is pessimistic about the company's future prospects.

Statement 2: An increase in the valuation allowance increases net income.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

A fully reserved tax asset (zero tax asset net of the valuation allowance) indicates that management does not expect the company to generate profits (against which deferred tax assets can be realized) in the near future.

A **decrease** in the valuation allowance (an increase in deferred tax assets) decreases income tax expense and increases net income.

11. An increase in inventory levels with no accompanying increase in sales *least* likely indicates:

A. Inefficient inventory management.

B. Inventory is obsolete.

C. LIFO liquidation.

Answer: C

If inventory levels are increasing with no accompanying increase in sales it could suggest (1) poor inventory management or (2) inventory obsolescence. In case of the latter, current profitability and inventory value would be overstated.

LIFO liquidation occurs when sales exceed purchases over the period, enabling a LIFO company to dip into old units of stock carried at old, lower prices, thereby deflating COGS.

12. Which of the following is *least* likely a motivation to issue low-quality financial reports?

A. Poor corporate internal controls.

B. Management seeking to increase incentive pay.

C. Management looking to remove doubts over the company's ability to raise funds in the future.

Answer: A

Poor internal controls provide an **opportunity** to issue low-quality financial reports.

13. Consider the following statements:

Statement 1: Motivations relating to trade effects tend to be stronger than those related to equity market effects.

Statement 2: Motivations relating to trade effects tend to be more important for smaller companies.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

Trade effects are particularly important for small companies. Equity market effects are the most powerful incentives.

Reading 34: Financial Statement Analysis: Applications

Use the following information regarding Beta Inc to answer Questions 1 to 10:

First year sales	$200,000
Annual sales growth	30%
COGS as a percentage of sales	30%
Operating expenses as a percentage of sales	45%
Tax rate	35%
Noncash working capital as a percentage of sales	60%
Annual investment in fixed capital as a percentage of sales	8%
Beginning noncash working capital	$140,000
Beginning cash	$15,000

1. The amount of sales in Year 3 is *closest to*:

   A. $260,000

   B. $338,000

   C. $439,400

2. Pre-tax income in Year 2 is *closest to*:

   A. $42,250

   B. $22,750

   C. $65,000

3. Cost of goods sold in Year 4 is *closest to*:

   A. $131,820

   B. $101,400

   C. $171,366

4. Net income in Year 4 is *closest to*:
   A. \$92,823
   B. \$109,850
   C. \$71,403
5. Noncash working capital in Year 1 is *closest to*:
   A. \$156,000
   B. \$120,000
   C. \$171,500
6. Investment in noncash working capital in Year 1 is *closest to*:
   A. −\$20,000
   B. \$120,000
   C. \$36,000
7. Investment in working capital in Year 3 is *closest to*:
   A. \$60,840
   B. \$202,800
   C. \$46,800
8. Change in cash in Year 3 is *closest to*:
   A. −\$31,966
   B. \$24,590
   C. −\$18,915
9. Ending cash for Year 4 is *closest to*:
   A. −\$6,555
   B. \$18,035
   C. −\$38,521
10. The amount of current assets in Year 5 is *closest to*:
    A. \$342,732
    B. \$257,086

C. \$304,212

11. Consider the following statements:

    Statement 1: Forecasting each expense item as a percentage of sales is a very objective method to calculate a firm's future net income.

    Statement 2: Forecasting is relatively more difficult for mature companies that operate in nonvolatile markets, compared to new companies operating in volatile markets.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are correct.

    C. Both statements are incorrect.

12. Which of the following is *least likely* evaluated to analyze credit risk of a company?

    A. Character

    B. Commitments

    C. Covenants

13. In the evaluation of credit risk of a company, capacity *most likely* refers to:

    A. The limitations and restrictions on the activities of the issuer.

    B. The commitments of the issuer to repay the debt obligations.

    C. The ability of the issuer to fulfil its obligations.

14. Which of the following companies is *most likely* to have low credit risk?

    A. Small start-up companies

    B. Companies with high free cash flow to total debt ratios

    C. Companies that have a low return on their assets

15. Consider the following statements:

    Statement 1: Screening is the process of filtering a set of potential investments into a smaller set by applying a set of criteria.

Statement 2: Analysts evaluate how a portfolio based on particular screens would have performed historically through ratio analysis.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

16. Which of the following screens is *least likely* to be used by an investor interested in investing in growth companies?

    A. Lower-than-average return on equity

    B. High price-to-cash flow ratio

    C. Sales growth exceeding 20% over the last 3 years

17. Which of the following scenarios *least likely* requires adjustments to the financial statements when comparing two companies?

    A. One company uses a higher proportion of equity in its capital structure than the other.

    B. One company uses FIFO while the other uses LIFO.

    C. One company uses operating leases while the other uses finance leases.

18. Consider the following statements:

    Statement 1: An analyst must remove all unrealized gains and losses from the income statement and include them in shareholders' equity for a company that classifies all marketable securities as available-for sale to compare its financial statements with a company that classifies securities as held for trading.

    Statement 2: In order to compare a company that has a significant amount of goodwill due to acquisitions with one that has grown internally, an analyst must remove the inflating effect of goodwill on book value and rely on price-to-tangible book value ratio.

    Which of the following is *least likely*?

    A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Reading 34: Financial Statement Analysis: Applications

Use the following information regarding Beta Inc. to answer Questions 1 to 10:

First year sales	$200,000
Annual sales growth	30%
COGS as a percentage of sales	30%
Operating expenses as a percentage of sales	45%
Tax rate	35%
Noncash working capital as a percentage of sales	60%
Annual investment in fixed capital as a percentage of sales	8%
Beginning noncash working capital	$140,000
Beginning cash	$15,000

1. The amount of sales in Year 3 is *closest to*:

   A. $260,000

   B. $338,000

   C. $439,400

   Answer: B

Years	1	2	3	4	5
Sales (30% rise every year)	200,000	260,000	338,000	439,400	571,220
Cost of goods sold (30% of sales)	60,000	78,000	101,400	131,820	171,366

Operating expenses (45% of sales)	90,000	117,000	152,100	197,730	257,049
Pre-tax income	50,000	65,000	84,500	109,850	142,805
Taxes (35% of pre-tax income)	17,500	22,750	29,575	38,447.50	49,981.75
Net income	32,500	42,250	54,925	71,402.50	92,823.25
Net income	32,500	42,250	54,925	71,402.50	92,823.25
Less: Investment in working capital	−20,000	36,000	46,800	60,840	79,092
Less: Investment in fixed capital	16,000	20,800	27,040	35,152	45,697.60
Change in cash	36,500	−14,550	−18,915	−24,589.5	−31,966.4
Beginning cash	15,000	51,500	36,950	18,035	−6,554.5
Ending cash	51,500	36,950	18,035	−6,554.5	−38,520.9
Cash	51,500	36,950	18,035	−6,554.5	−38,520.9
Noncash working capital (60% of	120,000	156,000	202,800	263,640	342,732

sales)					
Current assets	171,500	192,950	220,835	257,085.5	304,211.15

2. Pre-tax income in Year 2 is *closest to*:

   A. $42,250

   B. $22,750

   C. $65,000

   Answer: C

   See schedule

3. Cost of goods sold in Year 4 is *closest to*:

   A. $131,820

   B. $101,400

   C. $171,366

   Answer: A

   See schedule

4. Net income in Year 4 is *closest to*:

   A. $92,823

   B. $109,850

   C. $71,403

   Answer: C

   See schedule

5. Noncash working capital in Year 1 is *closest to*:

   A. $156,000

   B. $120,000

   C. $171,500

   Answer: B

   See schedule

6. Investment in noncash working capital in Year 1 is *closest to*:

   A. −$20,000

   B. $120,000

   C. $36,000

   Answer: A

   See schedule

   Required noncash working capital in Year 1 is $120,000. Beginning noncash working capital is $140,000. Therefore, $20,000 can be disinvested from the working capital (source of cash).

7. Investment in working capital in Year 3 is *closest to*:

   A. $60,840

   B. $202,800

   C. $46,800

   Answer: C

   See schedule

   Required noncash working capital in Year 3 is $202,800.

   Working capital at the end of Year 2 is $156,000.

   Therefore, investment in working capital in Year 3 = 202,800 − 156,000 = $46,800.

8. Change in cash in Year 3 is *closest to*:

   A. −$31,966

   B. $24,590

   C. −$18,915

   Answer: C

   See schedule

9. Ending cash for Year 4 is *closest to*:

   A. −$6,555

   B. $18,035

C. −$38,521

Answer: A

See schedule

10. The amount of current assets in Year 5 is *closest to*:

A. $342,732

B. $257,086

C. $304,212

Answer: C

See schedule

11. Consider the following statements:

Statement 1: Forecasting each expense item as a percentage of sales is a very objective method to calculate a firm's future net income.

Statement 2: Forecasting is relatively more difficult for mature companies that operate in non-volatile markets, compared to new companies operating in volatile markets.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are correct.

C. Both statements are incorrect.

Answer: C

Forecasting each expense item as a percentage of sales is a very subjective method.

Forecasting models tend to be simpler and work well for mature companies that operate in nonvolatile markets.

12. Which of the following is *least likely* evaluated to analyze credit risk of a company?

A. Character

B. Commitments

C. Covenants

Answer: B

Credit analysis involves evaluation of the 4 “C’s” of a company:

- Character
- Capacity
- Collateral
- Covenants

13. In the evaluation of credit risk of a company, capacity *most likely* refers to:

    A. The limitations and restrictions on the activities of the issuer.

    B. The commitments of the issuer to repay the debt obligations.

    C. The ability of the issuer to fulfil its obligations.

    Answer: C

    In the evaluation of credit risk of a company, capacity refers to the ability of the issuer to fulfill its obligations.

14. Which of the following companies is *most likely* to have low credit risk?

    A. Small start-up companies

    B. Companies with high free cash flow to total debt ratios

    C. Companies that have a low return on their assets

    Answer: B

    Small start-up companies and companies that earn a lower return on their assets have **higher** credit risk as compared to those that have a high free cash flow to total debt ratio.

15. Consider the following statements:

    Statement 1: Screening is the process of filtering a set of potential investments into a smaller set by applying a set of criteria.

    Statement 2: Analysts evaluate how a portfolio based on particular screens would have performed historically through ratio analysis.

    Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

Analysts evaluate how a portfolio based on particular screens would have performed historically through the process of **back-testing**.

16. Which of the following screens is *least likely* to be used by an investor interested in investing in growth companies?

A. Lower-than-average return on equity

B. High price-to-cash flow ratio

C. Sales growth exceeding 20% over the last 3 years

Answer: A

A lower-than-average return on equity indicates that the company is not a growth company.

17. Which of the following scenarios *least likely* requires adjustments to the financial statements when comparing two companies?

A. One company uses a higher proportion of equity in its capital structure than the other.

B. One company uses FIFO while the other uses LIFO.

C. One company uses operating leases while the other uses finance leases.

Answer: A

No adjustment is needed for comparing companies with different capital structures.

18. Consider the following statements:

Statement 1: An analyst must remove all unrealized gains and losses from the income statement and include them in shareholders' equity for a company that classifies all marketable securities as available for sale to compare its financial statements with a company that classifies securities as held for trading.

Statement 2: In order to compare a company that has a significant amount of goodwill due to acquisitions with one that has grown internally, an analyst must remove the inflating effect of goodwill on book value and rely on price-to-tangible book value ratio.

Which of the following is *least likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

An analyst must remove all unrealized gains and losses from **shareholders' equity** and include them in the **income statement** for a company that classifies all marketable securities as available for sale to compare its financial statements with a company that classifies securities as held for trading.

Statement 2 is correct.

Corporate Finance

Reading 35: Capital Budgeting

1. Which of the following types of capital budgeting projects is *least likely* to directly generate revenue?

   A. New product development

   B. Regulatory projects

   C. Replacement projects

2. Which of the following statements is *most likely* regarding the calculation of NPV?

   A. Externalities should never be considered in the capital budgeting process.

   B. Opportunity costs should not be considered in a capital budgeting process.

   C. Cash flows should be analyzed on an after-tax basis.

3. Which of the following is *most likely* a situation where capital rationing is required?

   A. The firm is currently making losses.

   B. The firm has a limited amount of funds to invest.

   C. Selecting a particular project will result in other lucrative investment opportunities for the company in the future.

4. Which of the following statements about the payback period is *least accurate*?

   A. The payback period considers cash flows throughout the entire life of the project.

   B. The payback period equals the time it takes for the initial investment for the project to be recovered.

   C. The payback period fails to consider the risks associated with the project.

5. Susan is considering investing in a new business which requires an

initial investment of $50,000. The business is expected to generate the following net cash flows:

Year 1: $20,000

Year 2: $30,000

Year 3: $35,000

Determine the project's NPV and IRR if Susan's cost of capital is 12%.

	NPV	IRR
A	$19,271	28.79%
B	$16,685	28%
C	$16,685	28.79%

6. A firm is considering investing in the following two mutually exclusive projects.

	NPV	IRR
Project 1	$5,000	20%
Project 2	$6,000	10%

Which of the following statements is correct?

A. The firm should invest in Project 1.

B. The firm should invest in both projects.

C. The firm should invest in Project 2.

7. Which of the following statements about NPV and IRR is *least accurate*?

A. For independent projects, if the IRR is greater than the cost of capital, the firm should undertake the project.

B. The IRR assumes that all cash flows are reinvested at the cost of capital.

C. For mutually exclusive projects, the firm should accept the one with the highest positive NPV.

8. If the project's NPV is negative, which of the following is most likely?

A. The cost of capital is greater than the project's IRR.

B. The cost of capital is less than the project's IRR.

C. The cost of capital is equal to the project's IRR.

9. Which of the following statements is *most likely* regarding NPV profiles?

   A. The point of intersection between the NPV profile and the x-axis is the IRR of the project.

   B. The point of intersection between the NPV profile and the y-axis is the NPV of the project.

   C. The point at which the IRRs of both the projects are the same is called the crossover point.

10. The specific capital budgeting procedures used by a manager *least likely* depend on the:

    A. Manager's level in the organization.

    B. Net present value of the project.

    C. Size of the organization.

11. Consider the following statements:

    Statement 1: In post-audit, actual results are compared to planned or predicted results, and any differences must be explained.

    Statement 2: There is a specific department responsible for generating investment ideas.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

12. Which of the following is *least accurate* regarding post-auditing?

    A. It helps highlight systematic errors.

    B. It helps organize the profitable proposals into a coordinated whole that fits within the company's overall strategies.

C. It helps improve business operations.

13. Consider the following statements:

    Statement 1: Lower level managers have discretion to make decisions that exceed a given capital budget.

    Statement 2: The benefits from the improved decision-making should exceed the costs of the capital budgeting efforts.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

14. Regulatory projects are *least likely*:

    A. Required by an insurance company.

    B. To generate profit.

    C. To cause a company to cease operations due to the high costs involved.

15. Which of the following classifications of projects requires the most amount of analysis for a decision regarding their acceptance?

    A. Replacing older equipment with newer, more efficient equipment

    B. Pet projects of the management

    C. Environmental projects

16. Which of the following statements is *most accurate* regarding projects that involve new products and services?

    A. They involve more people in the decision-making process as compared to those involved in regulatory projects.

    B. They are among the easier capital budgeting decisions.

    C. They involve less uncertainty than expansion projects.

17. Which of the following is *most likely* an assumption of capital budgeting?

    A. Any taxes involved need to be ignored.

B. Decisions are based on net income.

C. Financing costs are ignored.

18. Consider the following statements:

Statement 1: Economic income subtracts the cost of debt financing, and is based on the changes in the market value of the company.

Statement 2: Intangible costs also need to be considered in capital budgeting decisions.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are correct.

C. Both statements are incorrect.

19. Opportunity costs are *most likely*:

A. Costs that have already been incurred.

B. Incremental costs.

C. The worth of a resource in its next-best use.

20. Which of the following statements is *least accurate*?

A. An externality is the effect of an investment on other things besides the investment itself.

B. Cannibalization occurs when an investment takes customers and sales away from another company.

C. An incremental cash flow is the cash flow that is realized because of a decision.

21. Moon Manufacturers is considering investing in a new piece of equipment which is expected to increase the company's efficiency by 10%. The machine requires an initial investment of $1.5 million and is expected to generate cash flows amounting to $150,000 forever. Given that the company's required rate of return is 12%, the NPV of the project is *closest to*:

A. −$250,000

B. $0

C. $1,250,000

22. Jupiter Inc.'s directors are considering expanding their operations in foreign markets. They estimate that the cost of expansion is approximately $42 million. The company's CFO has estimated that new foreign operations will generate the following cash flows:

    Year 1 = $2,120,000

    Year 2 = $2,838,000

    Year 3 = $3,480,000

    Year 4 = $4,570,000

    Year 5 onward, the cash flow stream is going to stabilize at $5,500,000 which is going to continue forever. Given that the company's required rate of return is 11%, the NPV of the project is *closest to*:

    A. −$2,559,193

    B. −$28,967,777

    C. −$21,008,000

23. Mars Technologies is considering setting up a plant in a foreign country. The plant will have an estimated useful life of 4 years and the estimated costs of setting it up are $20 million. The company's CFO has estimated the following cash flows associated with the new plant:

    Year 1 = $5.8 million

    Year 2 = $7.9 million

    Year 3 = $8.6 million

    Year 4 = $10.5 million

    The company is concerned about its current exports to the foreign country, which are expected to be reduced by $1,200,000 for each of the 4 years. Given that the company's required rate of return is 12%, the NPV of the project is *closest to*:

    A. $0.63 million

    B. $4.27 million

    C. −$2.27 million

24. Sun Technologies is considering investing in two projects, A and B, which require an initial outlay of $4 million and $5.5 million respectively. The company requires a rate of return of 24% on its investments. Cash flows associated with the two projects are as follows:

Years	1	2	3	4
Project-A ($ millions)	1.8	2.4	2.8	2.1
Project-B ($ millions)	1.5	1.8	2.4	3.2

Which of the following statements is *most accurate*?

The company should invest in:

A. Project-A only, because Project-B's IRR is less than the required rate of return.

B. Project-B only, because Project-A's IRR is less than the required rate of return.

C. Both projects, because their IRRs are more than the required rate of return.

25. A company invests $120,000 in a project which is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($)	35,000	45,000	50,000	50,000

Given a discount rate of 12%, the project's payback period is *closest to*:

A. 2.8 years.

B. 3.54 years.

C. 3 years.

26. Which of the following is *least likely* a drawback of the payback period method?

A. It ignores the time value of money.

B. It is not a measure of profitability.

C. It is based on accounting numbers and not cash flows.

27. A company invests $200,000 in a project that is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($)	50,000	65,000	75,000	75,000

Given a discount rate of 10%, the project's discounted payback period is *closest to*:

A. 3.13 years.

B. 4 years.

C. 3.9 years.

28. Classic Manufacturers invests $200,000 in a piece of equipment. The company's management has estimated that the equipment will generate revenue of $50,000 in Year 1, $60,000 in Year 2, and $80,000 in Year 3 to Year 5. At the end of Year 5 the equipment will have zero salvage value. Given that the company depreciates the equipment on a straight-line basis and that there are no other revenues and expenses, the average accounting rate of return is *closest to*:

A. 75%

B. 30%

C. 70%

29. QM Motors invests $40 million in a new project which is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($ millions)	10	10	15	15

Given that the company's required rate of return is 12%, the project's profitability index is *closest to*:

A. 0.93

B. 1.25

C. 0.82

30. Malcolm Technologies' directors are considering the purchase of a subsidiary for $90 million. The present value of the future after-tax cash flows associated with the subsidiary is estimated to be $120 million. This is new information and is independent of other expectations regarding the company. The company has 3 million shares outstanding at the market price of $50. If the company goes ahead with the purchase, the market price of the company's stock will be *closest to*:

A. $60

B. $55

C. $40

Reading 35: Capital Budgeting

1. Which of the following types of capital budgeting projects is *least likely* to directly generate revenue?

   A. New product development

   B. Regulatory projects

   C. Replacement projects

   Answer: B

   Regulatory projects are forced upon companies by the government and do not directly generate any revenue.

2. Which of the following statements is *most likely* regarding the calculation of NPV?

   A. Externalities should never be considered in the capital budgeting process.

   B. Opportunity costs should not be considered in a capital budgeting process.

   C. Cash flows should be analyzed on an after-tax basis.

   Answer: C

   While calculating the net present value of a project, net after-tax cash flows are considered. Opportunity costs should be considered, and analysts must try to account for any externalities as well.

3. Which of the following is *most likely* a situation where capital rationing is required?

   A. The firm is currently making losses.

   B. The firm has a limited amount of funds to invest.

   C. Selecting a particular project will result in other lucrative investment opportunities for the company in the future.

   Answer: B

   A firm uses capital rationing when it has limited funds and must select the most lucrative projects from a variety of options.

4. Which of the following statements about the payback period is *least accurate*?

   A. The payback period considers cash flows throughout the entire life of the project.

   B. The payback period equals the time it takes for the initial investment for the project to be recovered.

   C. The payback period fails to consider the risks associated with the project.

   Answer: A

   The payback period only considers cash flows up to the point when the initial investment for the project is recovered.

5. Susan is considering investing in a new business which requires an initial investment of $50,000. The business is expected to generate the following net cash flows:

   Year 1: $20,000

   Year 2: $30,000

   Year 3: $35,000

   Determine the project's NPV and IRR if Susan's cost of capital is 12%.

	NPV	IRR
A	$19,271	28.79%
B	$16,685	28%
C	$16,685	28.79%

   Answer: C

   [CF][2Nd][CE|C]

   50000 [+/−] [ENTER]

   [↓] 20000 [ENTER]

   [↓][↓] 30000 [ENTER]

[↓] [↓] 35000 [ENTER]

[NPV] 12 [ENTER]

[↓] [CPT]

NPV = 16,685.27

[IRR] [CPT]

IRR = 28.79%

6. A firm is considering investing in the following two mutually exclusive projects.

	NPV	IRR
Project 1	$5,000	20%
Project 2	$6,000	10%

Which of the following statements is correct?

A. The firm should invest in Project 1.

B. The firm should invest in both projects.

C. The firm should invest in Project 2.

Answer: C

When considering mutually exclusive projects, a company should invest in the project with the highest positive NPV.

7. Which of the following statements about NPV and IRR is *least accurate*?

A. For independent projects, if the IRR is greater than the cost of capital, the firm should undertake the project.

B. The IRR assumes that all cash flows are reinvested at the cost of capital.

C. For mutually exclusive projects, the firm should accept the one with the highest positive NPV.

Answer: B

The IRR assumes that all cash flows are reinvested at the IRR, while the NPV assumes that interim cash flows are reinvested at the cost of capital.

8. If the project's NPV is negative, which of the following is most likely?

   A. The cost of capital is greater than the project's IRR.

   B. The cost of capital is less than the project's IRR.

   C. The cost of capital is equal to the project's IRR.

   Answer: A

   When IRR is lower than the cost of capital, the project's NPV will be negative.

9. Which of the following statements is *most likely* regarding NPV profiles?

   A. The point of intersection between the NPV profile and the x-axis is the IRR of the project.

   B. The point of intersection between the NPV profile and the y-axis is the NPV of the project.

   C. The point at which the IRRs of both the projects are the same is called the crossover point.

   Answer: A

   The point of intersection of the NPV profile with the x-axis gives the IRR of the project. The point of intersection of the NPV profile with the y-axis equals total net cash flows from the project. The crossover point is the point where the projects' NPVs are equal.

10. The specific capital budgeting procedures used by a manager *least likely* depend on the:

    A. Manager's level in the organization.

    B. Net present value of the project.

    C. Size of the organization.

    Answer: B

    The net present value (NPV) of the project affects the final decision whether or not to accept it. The other factor that affects capital budgeting procedures is the size and complexity of the project being evaluated.

11. Consider the following statements:

    Statement 1: In post-audit, actual results are compared to planned or predicted results, and any differences must be explained.

    Statement 2: There is a specific department responsible for generating investment ideas.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

    Answer: A

    Only Statement 1 is correct.

    Investment ideas can come from anywhere, from the top or the bottom of the organization, from any department or functional area, or from outside the company.

12. Which of the following is *least accurate* regarding post-auditing?

    A. It helps highlight systematic errors.

    B. It helps organize the profitable proposals into a coordinated whole that fits within the company's overall strategies.

    C. It helps improve business operations.

    Answer: B

    This step is performed by the company when it is planning the capital budget.

13. Consider the following statements:

    Statement 1: Lower level managers have discretion to make decisions that exceed a given capital budget.

    Statement 2: The benefits from the improved decision-making should exceed the costs of the capital budgeting efforts.

    Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

Lower level managers may have discretion to make decisions that do not exceed a given capital budget.

14. Regulatory projects are *least likely*:

    A. Required by an insurance company.

    B. To generate profit.

    C. To cause a company to cease operations due to the high costs involved.

    Answer: B

    Regulatory projects may generate no revenue and might not be undertaken by a company maximizing its own private interests.

15. Which of the following classifications of projects requires the most amount of analysis for a decision regarding their acceptance?

    A. Replacing older equipment with newer, more efficient equipment

    B. Pet projects of the management

    C. Environmental projects

    Answer: A

    Replacing older equipment with newer, more efficient equipment may involve very detailed analysis.

    Pet projects of the management escape any analysis for decisions regarding their acceptance.

    Environmental projects may be required by a governmental agency and require the least amount of analysis.

16. Which of the following statements is *most accurate* regarding projects that involve new products and services?

    A. They involve more people in the decision-making process as compared to those involved in regulatory projects.

B. They are among the easier capital budgeting decisions.

C. They involve less uncertainty than expansion projects.

Answer: A

Projects that involve new products and services involve more uncertainty than expansion projects. These decisions are complex and involve more people in the decision-making process.

17. Which of the following is *most likely* an assumption of capital budgeting?

A. Any taxes involved need to be ignored.

B. Decisions are based on net income.

C. Financing costs are ignored.

Answer: C

Taxes must be fully reflected in all capital budgeting decisions.

Decisions are based on cash flows. The decisions are not based on accounting concepts, such as net income.

Financing costs are reflected in the required rate of return.

18. Consider the following statements:

Statement 1: Economic income subtracts the cost of debt financing, and is based on the changes in the market value of the company.

Statement 2: Intangible costs also need to be considered in capital budgeting decisions.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are correct.

C. Both statements are incorrect.

Answer: C

Economic income does not subtract the cost of debt financing, and it is based on the changes in the market value of the company.

Intangible costs and benefits are often ignored because, if they are real, they should result in cash flows at some other time.

19. Opportunity costs are *most likely*:

    A. Costs that have already been incurred.

    B. Incremental costs.

    C. The worth of a resource in its next-best use.

    Answer: C

    An opportunity cost is what a resource is worth in its next-best use.

20. Which of the following statements is *least accurate*?

    A. An externality is the effect of an investment on other things besides the investment itself.

    B. Cannibalization occurs when an investment takes customers and sales away from another company.

    C. An incremental cash flow is the cash flow that is realized because of a decision.

    Answer: B

    Cannibalization occurs when an investment takes customers and sales away from another part of the company.

21. Moon Manufacturers is considering investing in a new piece of equipment which is expected to increase the company's efficiency by 10%. The machine requires an initial investment of $1.5 million and is expected to generate cash flows amounting to $150,000 forever. Given that the company's required rate of return is 12%, the NPV of the project is *closest to*:

    A. –$250,000

    B. $0

    C. $1,250,000

    Answer: A

    Present value of the cash flows = 150,000 / 0.12 = $1,250,000

    Net present value of the investment = 1,250,000 – 1,500,000 = –

$250,000

22. Jupiter Inc.'s directors are considering expanding their operations in foreign markets. They estimate that the cost of expansion is approximately $42 million. The company's CFO has estimated that new foreign operations will generate the following cash flows:

    Year 1 = $2,120,000

    Year 2 = $2,838,000

    Year 3 = $3,480,000

    Year 4 = $4,570,000

    Year 5 onward, the cash flow stream is going to stabilize at $5,500,000 which is going to continue forever. Given that the company's required rate of return is 11%, the NPV of the project is *closest to*:

    A. −$2,559,193

    B. −$28,967,777

    C. −$21,008,000

    Answer: A

    Value of the cash flow stream in Year 5 = 5,500,000 / 0.11 = $50,000,000

    [CF] [2^{ND}] [FV] [2^{ND}] [CE|C]

    42,000,000 [+|−] [ENTER] [↓]

    2,120,000 [ENTER] [↓] [↓]

    2,838,000 [ENTER] [↓] [↓]

    3,480,000 [ENTER] [↓] [↓]

    4,570,000[ENTER] [↓] [↓]

    50,000,000 [ENTER]

    [NPV] 11 [ENTER] [↓] [CPT]

    NPV = −2,559,192.663

23. Mars Technologies is considering setting up a plant in a foreign country. The plant will have an estimated useful life of 4 years and the

estimated costs of setting it up are $20 million. The company's CFO has estimated the following cash flows associated with the new plant:

Year 1 = $5.8 million

Year 2 = $7.9 million

Year 3 = $8.6 million

Year 4 = $10.5 million

The company is concerned about its current exports to the foreign country, which are expected to be reduced by $1,200,000 for each of the 4 years. Given that the company's required rate of return is 12%, the NPV of the project is *closest to*:

A. $0.63 million.

B. $4.27 million.

C. −$2.27 million.

Answer: A

Each year's cash flows will be reduced by $1.2 million due to the reduced exports to the foreign country.

[CF] [2ND] [FV] [2ND] [CE|C]

20 [+|−] [ENTER] [↓]

4.6 [ENTER] [↓] [↓]

6.7 [ENTER] [↓] [↓]

7.4 [ENTER] [↓] [↓]

9.3 [ENTER]

[NPV] 12 [ENTER] [↓] [CPT]

NPV = 0.6258 million

24. Sun Technologies is considering investing in two projects, A and B, which require an initial outlay of $4 million and $5.5 million respectively. The company requires a rate of return of 24% on its investments. Cash flows associated with the two projects are as follows:

Years	1	2	3	4
Project-A ($ millions)	1.8	2.4	2.8	2.1
Project-B ($ millions)	1.5	1.8	2.4	3.2

Which of the following statements is *most accurate*?

The company should invest in:

A. Project-A only, because Project-B's IRR is less than the required rate of return.

B. Project-B only, because Project-A's IRR is less than the required rate of return.

C. Both projects, because their IRRs are more than the required rate of return.

Answer: A

Project-A:

[CF] [2^{ND}] [FV] [2^{ND}] [CE|C]

4 [+|−] [ENTER] [↓]

1.8 [ENTER] [↓] [↓]

2.4 [ENTER] [↓] [↓]

2.8 [ENTER] [↓] [↓]

2.1 [ENTER]

[IRR] [CPT]

IRR = 41.22%

Project-B:

[CF] [2^{ND}] [FV] [2^{ND}] [CE|C]

5.5 [+|−] [ENTER] [↓]

1.5 [ENTER] [↓] [↓]

1.8 [ENTER] [↓] [↓]

2.4 [ENTER] [↓] [↓]

3.2 [ENTER]

[IRR] [CPT]

IRR = 19.43%

25. A company invests $120,000 in a project which is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($)	35,000	45,000	50,000	50,000

Given a discount rate of 12%, the project's payback period is *closest to*:

A. 2.8 years.

B. 3.54 years.

C. 3 years.

Answer: A

Years	0	1	2	3	4
Cumulative cash flows ($)	−120,000	−85,000	−40,000	10,000	60,000

The payback period for this investment equals 2 full years plus a fraction of the third year.

This fraction equals: 40,000 / 50,000 = 0.8

Therefore, payback period = 2 + 0.8 = 2.8 years

26. Which of the following is *least likely* a drawback of the payback period method?

A. It ignores the time value of money.

B. It is not a measure of profitability.

C. It is based on accounting numbers and not cash flows.

Answer: C

Payback period is based on cash flows associated with the project.

Statement C is a disadvantage of using the average accounting rate of return.

27. A company invests $200,000 in a project that is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($)	50,000	65,000	75,000	75,000

Given a discount rate of 10%, the project's discounted payback period is *closest to*:

A. 3.13 years.

B. 4 years.

C. 3.9 years.

Answer: C

Years	0	1	2	3	4
Cash flows ($)	−200,000	50,000	65,000	75,000	75,000
Cumulative cash flows ($)	−200,000	−150,000	−85,000	−10,000	65,000
Discounted cash flows ($)	−200,000	45,454.55	53,719.01	56,348.61	51,226.01
Cumulative discounted cash flows ($)	−200,000	−154,545.45	−100,826.44	−44,477.83	6,748.18

The discounted payback period for this investment equals 3 full years plus a fraction of the fourth year.

This fraction equals: 44,477.83 / 51,226.01 = 0.868

Therefore, discounted payback period = 3 + 0.868 = 3.868 years

28. Classic Manufacturers invests $200,000 in a piece of equipment. The company's management has estimated that the equipment will generate revenue of $50,000 in Year 1, $60,000 in Year 2, and

$80,000 in Year 3 to Year 5. At the end of Year 5 the equipment will have zero salvage value. Given that the company depreciates the equipment on a straight-line basis, and that there are no other revenues and expenses, the average accounting rate of return is *closest to*:

A. 75%

B. 30%

C. 70%

Answer: B

Years	1	2	3	4	5
Revenue	50,000	60,000	80,000	80,000	80,000
Depreciation	40,000	40,000	40,000	40,000	40,000
Net income	10,000	20,000	40,000	40,000	40,000

Average net income = (10,000 + 20,000 + 40,000 + 40,000 + 40,000) / 5 = $30,000

Average book value = (200,000 + 0) / 2 = $100,000

Average accounting rate of return = Average net income / Average book value

Average accounting rate of return = 30,000 / 100,000 = 30%

29. QM Motors invests $40 million in a new project which is expected to generate the following cash flows:

Years	1	2	3	4
Cash flows ($ millions)	10	10	15	15

Given that the company's required rate of return is 12%, the project's profitability index is *closest to*:

A. 0.93

B. 1.25

C. 0.82

Answer: A

Present value of future cash flows:

[CF] [2^{ND}] [FV] [2^{ND}] [CE|C]

0 [ENTER] [↓]

10 [ENTER] [↓] [↓]

10 [ENTER] [↓] [↓]

15 [ENTER] [↓] [↓]

15 [ENTER]

[NPV] 12 [ENTER] [↓] [CPT]

NPV = 37.11 million

Initial cost = $40 million

Profitability index = PV of future cash flows / Initial investment

Profitability index = 37.11 / 40 = 0.93

30. Malcolm Technologies' directors are considering the purchase of a subsidiary for $90 million. The present value of the future after-tax cash flows associated with the subsidiary is estimated to be $120 million. This is new information and is independent of other expectations regarding the company. The company has 3 million shares outstanding at the market price of $50. If the company goes ahead with the purchase, the market price of the company's stock will be *closest to*:

A. $60

B. $55

C. $40

Answer: A

NPV of the new project = 120 – 90 = $30 million

Company value before the purchase = 3 million × 50 = $150 million

Company value after the purchase = 150 + 30 = $180 million

Price / share after the purchase = 180 / 3 = $60

Reading 36: Cost of Capital

1. An analyst gathered the following information about a company:

Capital Structure	Required Rate of Return
25% debt	12%
35% preferred stock	14%
40% common stock	17%

   Assuming a tax rate of 30%, the company's cost of capital is *closest to*:

   A. 14.7%

   B. 13.8%

   C. 12.6%

2. Which of the following statements is *least accurate*?

   A. The cost of preferred stock is calculated as preferred stock dividend per share divided by current market price of preferred shares.

   B. The cost of equity may be estimated through different methods, which may produce different results.

   C. In the calculation of cost of debt, an adjustment is made for taxes because interest on debt is not tax deductible.

3. An analyst gathered the following information about a company:

   Risk-free rate: 8%

   Equity market risk premium: 6%

   Firm's beta: 1.2

   Cost of debt: 10%

   Tax rate: 30%

   Assuming a target debt to equity ratio of 0.3, calculate the firm's WACC.

   A. 13.31%

B. 14%

C. 12.74%

4. Assuming that a firm has equal amounts of debt and common stock outstanding, which of the following statements is *most accurate*?

   A. An increase in the firm's tax rate will cause its weighted average cost of capital (WACC) to rise.

   B. A decrease in the firm's tax rate will cause its WACC to fall.

   C. An increase in the firm's tax rate will cause its WACC to fall.

5. Which of the following is most likely to cause a reduction in the firm's WACC?

   A. An increase in the market risk premium

   B. A decrease in the firm's tax rate

   C. A decrease in the company's equity beta

6. An analyst gathered the following information for a company:

   Stock price: $45

   Last year's dividend per share: $5

   Dividend growth rate: 8%

   Cost of debt: 9%

   Tax rate: 35%

   Target debt to equity ratio: 0.4

   The firm's WACC is *closest to*:

   A. 14.34%

   B. 15.96%

   C. 16.86%

7. A firm is considering investing in a project that requires an initial investment of $150,000 and will last for 4 years. The following data is available to the management:

   Expected annual after-tax cash flows: $60,000

Target debt to equity ratio: 0.3

Cost of equity: 14%

Cost of debt: 10%

Tax rate: 25%

The project's NPV is *closest* to:

A. $29,212

B. $32,049

C. $30,338

8. Consider the following statements:

Statement 1: A potential supplier of capital will provide capital to a company if the return offered by the company is equal to the return that could be earned elsewhere at a lower risk.

Statement 2: The marginal cost of capital is the expected rate of return that investors demand for financing an average risk investment of the company.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

9. Jason Corporations has the following capital structure:

Equity = 65%

Debt = 25%

Preferred stock = 10%

The company's before-tax cost of debt is 10%, cost of common equity is 12%, and cost of preferred equity is 13%. Given that the company's marginal tax rate is 35%, its weighted average cost of capital is *closest to*:

A. 12.48%

B. 11.60%

C. 10.73%

10. An analyst gathered the following information regarding Alpha Associates:

Source of Capital	Book Value ($ millions)	Market Value ($ millions)
Common stock	37.5	52.8
Preferred stock	30	31.68
Bonds outstanding	7.5	11.52
Total capital	75	96

The company's before-tax cost of debt and the cost of common equity are 9% and the cost of preferred equity is 11%. Given that the company's marginal tax rate is 30%, its weighted average cost of capital is *closest to*:

A. 9.66%

B. 9.48%

C. 9.34%

11. Sun Corporations has the following capital structure:

Equity = 50%

Debt = 45%

Preferred stock = 5%

The company's after-tax cost of debt is 14% and the cost of equity is 16%. Given that the company's weighted average cost of capital is 14.5%, its cost of preferred equity is *closest to*:

A. 4.5%

B. 3.5%

C. 4.0%

12. Which of the following statements is *most accurate*?

A. Dividend payments provide a tax shield and, therefore, should be adjusted for tax savings in the WACC formula.

B. A company's marginal cost of capital increases as it raises additional capital.

C. The profitability of the company's investment opportunities increases as the company makes additional investments.

13. Alton Technologies is planning to set up a new plant in a foreign country. The company has the following capital structure:

Capital Structure	Required Rate of Return
45% common stock	8%
35% debt	7%
20% preferred stock	9%

The company's directors have estimated the cost of the investment to be $55 million and plan to finance $33 million by issuing common stock and $22 million by issuing debt. Given that the company's marginal tax rate is 40%, its weighted average cost of capital is *closest to*:

A. 20.10%

B. 7.60%

C. 6.48%

14. Which of the following statements is *least accurate*?

A. A company should raise capital and undertake all projects as long as the investment opportunity schedule is below the marginal cost of capital.

B. If a project has less risk than the firm's existing projects, the WACC is adjusted downward.

C. Yield-to-maturity is the yield that equates the present value of the bond's expected future cash flows to its current market price.

15. An analyst gathered the following information regarding Star Traders Inc.:

Current market share price = $42

Market price of preferred stock = \$52

Common stock (issued 300,000 common shares) = \$3,000,000

Preferred stock (issued 40,000 preferred shares) = \$800,000

The company pays dividends of \$3.40 per share and \$5.60 per share on its common and preferred stock respectively. The company's cost of preferred stock is *closest to*:

A. 9.48%

B. 10.77%

C. 11.63%

16. JB Associates earned net income of \$4.5 million in 2009. The company announced dividends of \$0.818 per share which will grow at a constant rate forever. Given that the weighted average number of common shares outstanding in 2009 is 2.2 million and that the company's book value of equity in 2008 and 2009 is \$22 million and \$28 million respectively, its annual growth rate in dividends is *closest to*:

A. 10.8%

B. 10.4%

C. 10.6%

17. An analyst gathered the following information regarding MT Technologies:

Current market share price = \$42

Current dividend = \$1.02 per share

Earnings retention rate = 70%

Return on equity = 22%

After-tax cost of debt = 9%

Marginal tax rate = 35%

Target debt-to-equity ratio = 0.3

The company's weighted average cost of capital is *closest to*:

A. 16.08%

B. 15.35%

C. 15.44%

18. Which of the following is *least likely* a method for calculating the cost of debt?

    A. Yield-to-maturity approach

    B. Bond yield plus risk premium approach

    C. Debt rating approach

19. Dolphin Inc. has a return on equity of 15%. Its next year's dividend is forecasted to be $1.52 per share and the current stock price is $43. Given that the company's cost of equity is 16%, its earnings retention rate is *closest to*:

    A. 15.50%

    B. 83.10%

    C. 60.43%

20. An analyst gathered the following information regarding Moon Traders:

    Current market share price = $55

    Risk free rate = 6%

    Current market risk premium = 7%

    Beta of stock = 1.4

    Target debt-to-equity ratio = 0.4

    The company has a capital structure that includes BB-rated bonds with 5 years to maturity. The yield-to-maturity on a comparable BB-rated bond with a similar term to maturity is 8%. Given that the company's marginal tax rate is 40%, its weighted average cost of capital is *closest to*:

    A. 12.66%

    B. 13.57%

C. 11.40%

21. Which of the following is *least likely* an issue in estimating the cost of debt?

    A. The company's currently outstanding bonds contain embedded options.

    B. The company uses leases as a source of finance.

    C. The company uses fixed rate debt.

22. The yield-to-maturity on Capital One's long-term debt is 8%. The risk premium is estimated to be 5.5%. Given that the company's marginal tax rate is 40%, its cost of equity and debt are *closest to*:

	Cost of Equity	Cost of Debt
A	10.3%	8.0%
B	13.5%	4.8%
C	10.3%	4.8%

23. Which of the following is *least likely* an assumption when using WACC as the discount rate to evaluate a particular project?

    A. The project will have a constant capital structure throughout its life.

    B. The company's market values of debt and equity are available.

    C. The project under consideration is an average risk project.

24. Which of the following statements regarding a stock's beta is *least accurate*?

    A. It is believed to revert toward 1 over time.

    B. It is calculated by regressing market returns against the company's stock's returns over a given period.

    C. Some experts argue that the betas of small companies should be adjusted upward to reflect greater risk.

25. Pluto Inc. issues a semi-annual pay bond to finance a new project. The bond has a 20-year term, a par value of $1,000, and offers a 7% coupon rate. Given that the bond is issued at $984.5 and that the

company's marginal tax rate is 40%, the after-tax cost of debt is *closest to*:

A. 3.57%

B. 4.29%

C. 7.15%

26. Beta estimates are *least likely* sensitive to:

    A. The choice of the market index against which stock returns are regressed.

    B. The capital structure of the company.

    C. The length of the estimation period.

27. Donald Investments has a target debt-to-equity ratio of 0.8. Given that the after-tax cost of debt is 5.6% and that the company's weighted average cost of capital is 10.8%, its cost of equity is *closest to*:

    A. 14.96%

    B. 31.60%

    C. 4.62%

28. Gamma Corporations has a target debt-to-equity ratio of 0.4. The company's equity beta is 0.9, risk-free rate is 7%, and expected return on the market is 12%. Given that the company's marginal tax rate is 35% and that its weighted average cost of capital is 10.5%, its before-tax cost of debt is *closest to*:

    A. 12.31%

    B. 8.00%

    C. 4.92%

29. Venus Inc. is considering investing in the hotel business. The company has a D/E ratio of 1.3, a before-tax cost of debt of 8%, and a marginal tax rate of 40%.

    Luxury Hotels is a publicly traded company that operates only in the hotel industry. The company has a D/E ratio of 1.8, an equity beta of 0.9, and marginal tax rate of 35%.

The risk-free rate is 6% and expected market risk premium is 7%. The weighted average cost of capital that Venus Inc should use to evaluate the risk of entering the hotel industry is *closest to*:

A. 7.57%

B. 9.70%

C. 7.96%

30. Consider the following statements:

Statement 1: A company's existing debt covenants that restrict it from issuing debt with similar seniority causes its marginal cost of capital to increase as additional capital is raised.

Statement 2: Deviation from its target capital structure over the short term causes the marginal cost of capital to increase as additional capital is raised.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

31. Mega Associates wants to invest in a project in Elantica, an emerging country. It gathered the following information:

- Yield on Elantica's dollar denominated 10-year government bond = 12%
- Yield on a 10-year U.S. Treasury bond = 3.5%
- Annualized standard deviation of Elantica's stock market = 34%
- Annualized standard deviation of Elantica's dollar-denominated 10-year government bond = 25%
- Project's beta = 1.3
- Expected return on the Elantican equity market = 11%
- Risk-free rate = 6%

The country risk premium and the cost of equity for the project in Elantica are *closest to*:

	Country Risk Premium	Cost of Equity
A	11.56%	27.53%
B	11.56%	24.06%
C	16.32%	28.82%

32. Beta Inc. wants to raise capital amounting to $550 million. It has a target debt-to-equity ratio of 1.2. The following table illustrates the company's marginal cost of capital schedule:

Amount of New Debt ($ millions)	After-Tax Cost of Debt	Amount of New Equity ($ millions)	Cost of Equity
0 – 100	3.5%	0 – 200	6.5%
100 – 250	4.5%	200 – 400	7.5%
250 – 450	5.5%	400 – 600	8.5%

The company's weighted average cost of capital is *closest to*:

A. 6.41%

B. 5.86%

C. 13.4%

33. Jupiter Inc. is planning to invest $142,000 in a new project. The company's directors have been provided with the following information:

Expected future cash flows = $25,000 every year for the next 6 years

Before-tax cost of debt = 7.5%

Current market share price = $37.50

Expected market risk premium = 5%

Risk-free rate = 6%

Beta of the stock = 1.4

Target debt-to-equity ratio = 0.5

Marginal tax rate = 30%

Flotation costs for equity = 3.5%

The net present value of the project is *closest to*:

A. −$39,405

B. −$34,435

C. −$37,749

Reading 36: Cost of Capital

1. An analyst gathered the following information about a company:

Capital Structure	Required Rate of Return
25% debt	12%
35% preferred stock	14%
40% common stock	17%

Assuming a tax rate of 30%, the company's cost of capital is *closest to*:

A. 14.7%

B. 13.8%

C. 12.6%

Answer: B

WACC = (0.25) (0.12) (1 – 0.3) + (0.35)(0.14) + (0.4)(0.17) = 13.8%

2. Which of the following statements is *least accurate*?

A. The cost of preferred stock is calculated as preferred stock dividend per share divided by current market price of preferred shares.

B. The cost of equity may be estimated through different methods, which may produce different results.

C. In the calculation of cost of debt, an adjustment is made for taxes because interest on debt is not tax deductible.

Answer: C

An adjustment is made for taxes because interest on debt is tax deductible.

3. An analyst gathered the following information about a company:

Risk-free rate: 8%

Equity market risk premium: 6%

Firm's beta: 1.2

Cost of debt: 10%

Tax rate: 30%

Assuming a target debt to equity ratio of 0.3, calculate the firm's WACC.

A. 13.31%

B. 14%

C. 12.74%

Answer: A

Cost of equity = 0.08 + (1.2) (0.06) = 15.2%

After-tax cost of debt = 0.1 (1 – 0.3) = 7%

WACC = 15.2% (1/1.3) + 7% (0.3/1.3) = 13.31%

4. Assuming that a firm has equal amounts of debt and common stock outstanding, which of the following statements is *most accurate*?

   A. An increase in the firm's tax rate will cause its weighted average cost of capital (WACC) to rise.

   B. A decrease in the firm's tax rate will cause its WACC to fall.

   C. An increase in the firm's tax rate will cause its WACC to fall.

   Answer: C

   An increase in the firm's tax rate causes its after-tax cost of debt to fall, reducing the firm's WACC.

5. Which of the following is most likely to cause a reduction in the firm's WACC?

   A. An increase in the market risk premium

   B. A decrease in the firm's tax rate

   C. A decrease in the company's equity beta

   Answer: C

   A decrease in the risk company's equity beta reduces its cost of equity and therefore its WACC.

6. An analyst gathered the following information for a company:

Stock price: $45

Last year's dividend per share: $5

Dividend growth rate: 8%

Cost of debt: 9%

Tax rate: 35%

Target debt to equity ratio: 0.4

The firm's WACC is *closest to*:

A. 14.34%

B. 15.96%

C. 16.86%

Answer: B

We use the Gordon growth model to estimate the company's WACC.

Cost of equity = [5 (1 + 0.08)/45] + 0.08 = 20%

After-tax cost of debt = 0.09 (1 – 0.35) = 5.85%

WACC = 20% (1/1.4) + 5.85% (0.4/1.4) = 15.96%

7. A firm is considering investing in a project that requires an initial investment of $150,000 and will last for 4 years. The following data is available to the management:

   Expected annual after-tax cash flows: $60,000

   Target debt to equity ratio: 0.3

   Cost of equity: 14%

   Cost of debt: 10%

   Tax rate: 25%

   The project's NPV is *closest* to:

   A. $29,212

   B. $32,049

   C. $30,338

Answer: C

After-tax cost of debt = 0.1 (1 – 0.25) = 7.5%

WACC = 14% (1/1.3) + 7.5% (0.3/1.3) = 12.5%

[CF][2ND][CE|C]

150000 [+/−] [ENTER]

[↓] 60000 [ENTER]

[↓] 4 [ENTER]

[NPV] 12.5 [ENTER]

[↓] [CPT]

NPV = 30,338.36

8. Consider the following statements:

   Statement 1: A potential supplier of capital will provide capital to a company if the return offered by the company is equal to the return that could be earned elsewhere at a lower risk.

   Statement 2: The marginal cost of capital is the expected rate of return that investors demand for financing an average risk investment of the company.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are correct.

   Answer: A

   A potential supplier of capital will not provide capital to a company if the return offered by the company is equal to the return that could be earned elsewhere at a lower risk.

9. Jason Corporations has the following capital structure:

   Equity = 65%

   Debt = 25%

Preferred stock = 10%

The company's before-tax cost of debt is 10%, cost of common equity is 12%, and cost of preferred equity is 13%. Given that the company's marginal tax rate is 35%, its weighted average cost of capital is *closest to*:

A. 12.48%

B. 11.60%

C. 10.73%

Answer: C

WACC = (0.65 × 0.12) + [0.25 × 0.1 × (1 – 0.35)] + (0.1 × 0.13) = 10.725%

10. An analyst gathered the following information regarding Alpha Associates:

Source of Capital	**Book Value ($ millions)**	**Market Value ($ millions)**
Common stock	37.5	52.8
Preferred stock	30	31.68
Bonds outstanding	7.5	11.52
Total capital	75	96

The company's before-tax cost of debt and the cost of common equity are 9% and the cost of preferred equity is 11%. Given that the company's marginal tax rate is 30%, its weighted average cost of capital is *closest to*:

A. 9.66%

B. 9.48%

C. 9.34%

Answer: C

Percentage of equity in the capital structure = 52.8 / 96 = 55%

Percentage of debt in the capital structure = 11.52 / 96 = 12%

Percentage of preferred stock in the capital structure = 31.68 / 96 = 33%

WACC = $(0.55 \times 0.09) + [0.12 \times 0.09 \times (1 - 0.3)] + (0.33 \times 0.11) =$ 9.336%

11. Sun Corporations has the following capital structure:

    Equity = 50%

    Debt = 45%

    Preferred stock = 5%

    The company's after-tax cost of debt is 14% and the cost of equity is 16%. Given that the company's weighted average cost of capital is 14.5%, its cost of preferred equity is *closest to*:

    A. 4.5%

    B. 3.5%

    C. 4.0%

    Answer: C

    $0.145 = (0.5 \times 0.16) + (0.45 \times 0.14) + (0.05 \times \text{Cost of preferred equity})$

    Cost of preferred equity = $(0.145 - 0.143) / 0.05 = 4\%$

12. Which of the following statements is *most accurate*?

    A. Dividend payments provide a tax shield and, therefore, should be adjusted for tax savings in the WACC formula.

    B. A company's marginal cost of capital increases as it raises additional capital.

    C. The profitability of the company's investment opportunities increases as the company makes additional investments.

    Answer: B

    Interest payments provide a tax shield and, therefore, should be adjusted for tax savings in the WACC formula.

    The profitability of the company's investment opportunities decreases as the company makes additional investments.

13. Alton Technologies is planning to set up a new plant in a foreign country. The company has the following capital structure:

Capital Structure	Required Rate of Return
45% common stock	8%
35% debt	7%
20% preferred stock	9%

The company's directors have estimated the cost of the investment to be $55 million and plan to finance $33 million by issuing common stock and $22 million by issuing debt. Given that the company's marginal tax rate is 40%, its weighted average cost of capital is *closest to*:

A. 20.10%

B. 7.60%

C. 6.48%

Answer: C

Percentage of equity in the capital structure = 33 / 55 = 60%

Percentage of debt in the capital structure = 22 / 55 = 40%

WACC = $(0.6 \times 0.08) + (0.4 \times 0.07 \times 0.6) = 6.48\%$

14. Which of the following statements is *least accurate*?

A. A company should raise capital and undertake all projects as long as the investment opportunity schedule is below the marginal cost of capital.

B. If a project has less risk than the firm's existing projects, the WACC is adjusted downward.

C. Yield-to-maturity is the yield that equates the present value of the bond's expected future cash flows to its current market price.

Answer: A

A company should raise capital and undertake all projects as long as the investment opportunity schedule is above the marginal cost of capital (i.e., to the left of the intersection point).

15. An analyst gathered the following information regarding Star Traders Inc.:

Current market share price = \$42

Market price of preferred stock = \$52

Common stock (issued 300,000 common shares) = \$3,000,000

Preferred stock (issued 40,000 preferred shares) = \$800,000

The company pays dividends of \$3.40 per share and \$5.60 per share on its common and preferred stock respectively. The company's cost of preferred stock is *closest to*:

A. 9.48%

B. 10.77%

C. 11.63%

Answer: B

Cost of preferred stock = 5.6 / 52 = 10.769%

16. JB Associates earned net income of \$4.5 million in 2009. The company announced dividends of \$0.818 per share which will grow at a constant rate forever. Given that the weighted average number of common shares outstanding in 2009 is 2.2 million and that the company's book value of equity in 2008 and 2009 is \$22 million and \$28 million respectively, its annual growth rate in dividends is *closest to*:

A. 10.8%

B. 10.4%

C. 10.6%

Answer: A

EPS in 2009 = Net income / Weighted average number of common shares

EPS in 2009 = 4.5 / 2.2 = \$2.045

Dividend payout ratio = 0.818 / 2.045 = 40%

Return on equity = 4.5 / [(22 + 28) / 2] = 18%

Dividend growth rate = (1 – 0.4) × 0.18 = 10.8%

17. An analyst gathered the following information regarding MT Technologies:

    Current market share price = $42

    Current dividend = $1.02 per share

    Earnings retention rate = 70%

    Return on equity = 22%

    After-tax cost of debt = 9%

    Marginal tax rate = 35%

    Target debt-to-equity ratio = 0.3

    The company's weighted average cost of capital is *closest to*:

    A. 16.08%

    B. 15.35%

    C. 15.44%

    Answer: A

    Dividend growth rate = 0.7 × 0.22 = 15.4%

    Next year's expected dividend = 1.02 × 1.154 = $1.17708

    Cost of equity = (1.17708 / 42) + 0.154 = 18.2026%

    WACC = (0.182026 × 1/1.3) + (0.09 × 0.3/1.3) = 16.08%

18. Which of the following is *least likely* a method for calculating the cost of debt?

    A. Yield-to-maturity approach

    B. Bond yield plus risk premium approach

    C. Debt rating approach

    Answer: B

    Bond yield plus risk premium approach is used to calculate the cost of equity.

19. Dolphin Inc. has a return on equity of 15%. Its next year's dividend is

forecasted to be $1.52 per share and the current stock price is $43. Given that the company's cost of equity is 16%, its earnings retention rate is *closest to*:

A. 15.50%

B. 83.10%

C. 60.43%

Answer: B

0.16 = (1.52 / 43) + Dividend growth rate

Dividend growth rate = 12.4651%

0.124651 = Retention rate × 0.15

Retention rate = 83.10%

20. An analyst gathered the following information regarding Moon Traders:

Current market share price = $55

Risk-free rate = 6%

Current market risk premium = 7%

Beta of stock = 1.4

Target debt-to-equity ratio = 0.4

The company has a capital structure that includes BB-rated bonds with 5 years to maturity. The yield-to-maturity on a comparable BB-rated bond with a similar term to maturity is 8%. Given that the company's marginal tax rate is 40%, its weighted average cost of capital is *closest to*:

A. 12.66%

B. 13.57%

C. 11.40%

Answer: A

Cost of equity = 0.06 + (1.4 × 0.07) = 15.8%

After-tax cost of debt = 0.08 × (1 – 0.4) = 4.8%

WACC = (0.158 × 1/1.4) + (0.048 × 0.4/1.4) = 12.66%

21. Which of the following is *least likely* an issue in estimating the cost of debt?

    A. The company's currently outstanding bonds contain embedded options.

    B. The company uses leases as a source of finance.

    C. The company uses fixed rate debt.

    Answer: C

    A company using fixed rate debt is not an issue in calculating the cost of equity. However, floating rate debt is an issue because floating rate is reset periodically based on a reference rate and is, therefore, more difficult to estimate than the cost of fixed rate debt.

22. The yield-to-maturity on Capital One's long-term debt is 8%. The risk premium is estimated to be 5.5%. Given that the company's marginal tax rate is 40%, its cost of equity and debt are *closest to*:

	Cost of Equity	Cost of Debt
A	10.3%	8.0%
B	13.5%	4.8%
C	10.3%	4.8%

    Answer: B

    Cost of equity = 0.08 + 0.055 = 13.5%

    After-tax cost of debt = 0.08 (1 – 0.4) = 4.8%

23. Which of the following is *least likely* an assumption when using WACC as the discount rate to evaluate a particular project?

    A. The project will have a constant capital structure throughout its life.

    B. The company's market values of debt and equity are available.

    C. The project under consideration is an average risk project.

    Answer: B

Statement B is not an assumption when using WACC as the discount rate to evaluate a particular project.

24. Which of the following statements regarding a stock's beta is *least accurate*?

    A. It is believed to revert toward 1 over time.

    B. It is calculated by regressing market returns against the company's stock's returns over a given period.

    C. Some experts argue that the betas of small companies should be adjusted upward to reflect greater risk.

    Answer: B

    Beta can be calculated by regressing the company's stock's returns against market returns over a given period.

25. Pluto Inc. issues a semi-annual pay bond to finance a new project. The bond has a 20-year term, a par value of \$1,000, and offers a 7% coupon rate. Given that the bond is issued at \$984.5 and that the company's marginal tax rate is 40%, the after-tax cost of debt is *closest to*:

    A. 3.57%

    B. 4.29%

    C. 7.15%

    Answer: B

    N = 40; PV = −\$984.5; FV = \$1,000; PMT = \$35; CPT I/Y; I/Y = 3.5734%

    Before-tax cost of debt = $3.5734 \times 2 = 7.1468\%$

    After-tax cost of debt = $0.071468 \times (1 - 0.4) = 4.29\%$

26. Beta estimates are *least likely* sensitive to:

    A. The choice of the market index against which stock returns are regressed.

    B. The capital structure of the company.

    C. The length of the estimation period.

Answer: B

Beta estimates are not affected by the capital structure of the company.

27. Donald Investments has a target debt-to-equity ratio of 0.8. Given that the after-tax cost of debt is 5.6% and that the company's weighted average cost of capital is 10.8%, its cost of equity is *closest to*:

A. 14.96%

B. 31.60%

C. 4.62%

Answer: A

0.108 = (1/1.8 × Cost of equity) + (0.8/1.8 × 0.056)

Cost of equity = 14.96%

28. Gamma Corporations has a target debt-to-equity ratio of 0.4. The company's equity beta is 0.9, risk-free rate is 7%, and expected return on the market is 12%. Given that the company's marginal tax rate is 35% and that its weighted average cost of capital is 10.5%, its before-tax cost of debt is *closest to*:

A. 12.31%

B. 8.00%

C. 4.92%

Answer: A

Cost of equity = 0.07 + [0.9 × (0.12 – 0.07)] = 11.5%

0.105 = (0.115 × 1/1.4) + (0.4/1.4 × After-tax cost of debt)

After-tax cost of debt = 8%

Before-tax cost of debt = 0.08 / (1 – 0.35) = 12.3077%

29. Venus Inc. is considering investing in the hotel business. The company has a D/E ratio of 1.3, a before-tax cost of debt of 8%, and a marginal tax rate of 40%.

Luxury Hotels is a publicly traded company that operates only in the hotel industry. The company has a D/E ratio of 1.8, an equity beta of 0.9, and marginal tax rate of 35%.

The risk-free rate is 6% and expected market risk premium is 7%. The weighted average cost of capital that Venus Inc should use to evaluate the risk of entering the hotel industry is *closest to*:

A. 7.57%

B. 9.70%

C. 7.96%

Answer: A

$\beta_{\text{Asset}} = \beta_{\text{Equity}} \times [1 / \{1 + [(1 - t) \times D/E]\}]$

$\beta_{\text{Asset}} = 0.9 \times [1 / \{1 + [(1 - 0.35) \times 1.8]\}]$

$\beta_{\text{Asset}} = 0.4147$

$\beta_{\text{Project}} = \beta_{\text{Asset}} \times \{1 + [(1 - t) \times D/E]\}$

$\beta_{\text{Project}} = 0.4147 \times \{1 + [(1 - 0.4) \times 1.3]\}$

$\beta_{\text{Project}} = 0.7382$

Cost of equity = 0.06 + (0.7382 × 0.07) = 11.17%

After-tax cost of debt = 0.08 × (1 – 0.4) = 4.8%

WACC = (0.1117 × 1/2.3) + (0.048 × 1.3/2.3) = 7.57%

30. Consider the following statements:

Statement 1: A company's existing debt covenants that restrict it from issuing debt with similar seniority causes its marginal cost of capital to increase as additional capital is raised.

Statement 2: Deviation from its target capital structure over the short term causes the marginal cost of capital to increase as additional capital is raised.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

Both statements are correct.

31. Mega Associates wants to invest in a project in Elantica, an emerging country. It gathered the following information:

- Yield on Elantica's dollar-denominated 10-year government bond = 12%
- Yield on a 10-year U.S. Treasury bond = 3.5%
- Annualized standard deviation of Elantica's stock market = 34%
- Annualized standard deviation of Elantica's dollar-denominated 10-year government bond = 25%
- Project's beta = 1.3
- Expected return on the Elantican equity market = 11%
- Risk-free rate = 6%

The country risk premium and the cost of equity for the project in Elantica are *closest to*:

	Country Risk Premium	**Cost of Equity**
A	11.56%	27.53%
B	11.56%	24.06%
C	16.32%	28.82%

Answer: A

Country risk premium = (0.12 – 0.035) × (0.34 / 0.25) = 11.56%

Cost of equity = 0.06 + [1.3 × (0.11 – 0.06 + 0.1156)] = 27.528%

32. Beta Inc. wants to raise capital amounting to $550 million. It has a target debt-to-equity ratio of 1.2. The following table illustrates the company's marginal cost of capital schedule:

Amount of New Debt ($ millions)	**After-Tax Cost of Debt**	**Amount of New Equity ($ millions)**	**Cost of Equity**
0 – 100	3.5%	0 – 200	6.5%
100 – 250	4.5%	200 – 400	7.5%
250 – 450	5.5%	400 – 600	8.5%

The company's weighted average cost of capital is *closest to*:

A. 6.41%

B. 5.86%

C. 13.4%

Answer: A

Proportion of new debt raised = 550 × (1.2 / 2.2) = $300

Proportion of new equity raised = 550 (1 / 2.2) = $250

WACC = (0.055 × 1.2/2.2) + (0.075 × 1/2.2) = 6.4091%

33. Jupiter Inc. is planning to invest $142,000 in a new project. The company's directors have been provided with the following information:

Expected future cash flows = $25,000 every year for the next 6 years

Before-tax cost of debt = 7.5%

Current market share price = $37.5

Expected market risk premium = 5%

Risk-free rate = 6%

Beta of the stock = 1.4

Target debt-to-equity ratio = 0.5

Marginal tax rate = 30%

Flotation costs for equity = 3.5%

The net present value of the project is *closest to*:

A. −$39,405

B. −$34,435

C. −$37,749

Answer: C

After-tax cost of debt = 0.075 × (1 – 0.3) = 5.25%

Cost of equity = 0.06 + (1.4 × 0.05) = 13%

WACC = (0.13 × 1/1.5) + (0.0525 × 0.5/1.5) = 10.4167%

Dollar amount of flotation costs = 142,000 × 1/1.5 × 0.035 = $3,313.3333

Therefore, initial investment = 142,000 + 3,313.3333 = $145,313.3333

Use the following keystrokes to calculate the NPV of the project:

[CF] [2ND] [CE|C]

145,313.3333 [+|−] [ENTER] [↓]

25,000 [ENTER] [↓]

6 [ENTER]

[NPV] 10.4167 [ENTER] [↓] [CPT]

NPV = −$37,748.64

Reading 37: Measures of Leverage

1. An analyst gathered the following information regarding Alpha Manufacturers:

   Number of units sold = 550,000

   Contribution margin = $11.2 million

   Fixed operating costs = $4.5 million

   Fixed financing expense = $1.2 million

   The company's degree of operating leverage is *closest to*:

   A. 3.71

   B. 1.67

   C. 2.04

2. The following information relates to Gamma Corporations:

   Number of units sold = 250,000

   Contribution margin per unit = $30

   Fixed operating costs = $1.2 million

   A 20% increase in the number of units sold will increase the company's operating income by:

   A. 1.19%

   B. 11.91%

   C. 23.81%

3. The following information is available for two companies, Mercury Inc. and Jupiter Inc.

	Mercury Inc.	**Jupiter Inc.**
Number of units sold	300,000	300,000
Sales price per unit ($)	20	25
Variable cost per unit ($)	7	10

Fixed operating costs ($)	1,000,000	1,100,000
Fixed financial costs ($)	500,000	500,000

Which of the following statements is *least accurate*?

A. Mercury Inc.'s net income is more sensitive to changes in operating income as compared to that of Jupiter Inc.

B. Mercury Inc.'s operating income is less sensitive to changes in the number of units sold as compared to that of Jupiter Inc.

C. Jupiter Inc.'s operating income is less sensitive to changes in the number of units sold as compared to that of Mercury Inc.

4. An analyst gathered the following information regarding Violet Inc.:

Number of units sold = 500,000

Contribution margin per unit = $22

Fixed operating costs = $1,500,000

Fixed financing costs = $400,000

Which of the following is *most accurate*?

	Degree of financial leverage	Degree of total leverage
A	1.158	1.044
B	1.044	1.209
C	1.158	1.209

Use the following information regarding Beta Inc. to answer Questions 5 to 10:

Number of units sold = 450,000

Sales price per unit = $15

Variable cost per unit = $6

Degree of operating leverage = 1.30645

Degree of financial leverage = 1.08772

5. Beta Inc.'s fixed operating costs are *closest to*:

A. $950,000

B. $750,000

C. $850,000

6. Beta Inc.'s fixed financial costs are *closest to*:

   A. $266,131

   B. $258,066

   C. $250,000

7. Beta Inc.'s degree of total leverage is *closest to*:

   A. 1.2011

   B. 1.4211

   C. 1.2411

8. Which of the following statements is *most accurate*?

   A. Beta Inc.'s operating income will be more sensitive to changes in the number of units sold at higher sales volumes.

   B. Beta Inc.'s net income will be more sensitive to changes in operating income if fixed financing costs fall to $200,000.

   C. Beta Inc.'s net income will be less sensitive to changes in the number of units sold if fixed financing costs fall to $200,000.

9. Beta Inc.'s breakeven number of units is *closest to*:

   A. 77,777 units

   B. 133,333 units

   C. 65,770 units

10. Beta Inc.'s operating breakeven number of units is *closest to*:

    A. 94,444 units

    B. 83,333 units

    C. 105,555 units

11. Consider the following statements:

    Statement 1: A company's DOL does not vary with the number of units produced and sold.

Statement 2: The higher the proportion of variable costs in a company's cost structure, the higher its earnings volatility.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

12. At the point where operating income equals zero, which of the following is *most likely*?

A. DOL is negative.

B. Operating income is not very sensitive to changes in operating income.

C. DOL is undefined.

13. Which of the following statements is *least likely*?

A. Management has more control over a company's degree of financial leverage than its degree of operating leverage.

B. The degree of financial leverage is different at different levels of operating income.

C. All other things remaining the same, a company with a larger ratio of tangible assets to intangible assets will be able to use less financial leverage.

14. Consider the following statements:

Statement 1: The DOL measures the sensitivity of net income to changes in the number of units sold.

Statement 2: The DFL measures the sensitivity of net income to changes in operating income.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

15. Which of the following is *least likely* directly related to changes in the number of units that a company produces and sells?

    A. The degree of financial leverage

    B. The degree of total leverage

    C. The degree of operating leverage

16. Consider the following statements:

    Statement 1: Under Chapter 7 bankruptcy, the original business ceases to exist.

    Statement 2: A company with high financial costs is less likely to undergo successful reorganization than a company with higher operating costs because operating costs can be controlled.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are correct.

Reading 37: Measures of Leverage

1. An analyst gathered the following information regarding Alpha Manufacturers:

   Number of units sold = 550,000

   Contribution margin = $11.2 million

   Fixed operating costs = $4.5 million

   Fixed financing expense = $1.2 million

   The company's degree of operating leverage is *closest to*:

   A. 3.71

   B. 1.67

   C. 2.04

   Answer: B

$$\text{Degree of operating leverage} = \frac{Q \times (P - V)}{Q \times (P - V) - F}$$

$$\text{DOL} = \frac{11,200,000}{11,200,000 - 4,500,000} = 1.6716$$

2. The following information relates to Gamma Corporations:

   Number of units sold = 250,000

   Contribution margin per unit = $30

   Fixed operating costs = $1.2 million

   A 20% increase in the number of units sold will increase the company's operating income by:

   A. 1.19%

   B. 11.91%

   C. 23.81%

   Answer: C

$$\text{Degree of operating leverage} = \frac{Q \times (P - V)}{Q \times (P - V) - F}$$

$$\text{DOL} = \frac{250,000 \times 30}{(250,000 \times 30) - 1,200,000} = 1.1905$$

This implies that a 1% change in units sold will result in a 1.1905% change in the company's operating income. Therefore, a 20% increase in the number of units sold will increase operating income by 23.81% (1.1905 × 20).

3. The following information is available for two companies, Mercury Inc and Jupiter Inc.

	Mercury Inc.	**Jupiter Inc.**
Number of units sold	300,000	300,000
Sales price per unit ($)	20	25
Variable cost per unit ($)	7	10
Fixed operating costs ($)	1,000,000	1,100,000
Fixed financial costs ($)	500,000	500,000

Which of the following statements is *least accurate*?

A. Mercury Inc.'s net income is more sensitive to changes in operating income as compared to that of Jupiter Inc.

B. Mercury Inc.'s operating income is less sensitive to changes in the number of units sold as compared to that of Jupiter Inc.

C. Jupiter Inc.'s operating income is less sensitive to changes in the number of units sold as compared to that of Mercury Inc.

Answer: B

$$\text{Degree of operating leverage} = \frac{Q \times (P-V)}{Q \times (P-V) - F}$$

$$\text{Mercury Inc's DOL} = \frac{300,000(20-7)}{[300,000(20-7)] - 1,000,000} = 1.3448$$

$$\text{Jupiter Inc's DOL} = \frac{300,000(25-10)}{[300,000(25-10)] - 1,100,000} = 1.3235$$

$$\text{Degree of financial leverage} = \frac{Q \times (P-V) - F}{Q \times (P-V) - F - C}$$

$$\text{Mercury Inc's DFL} = \frac{300,000(20-7) - 1,000,000}{[300,000(20-7)] - 1,000,000 - 500,000} = 1.208$$

$$\text{Jupiter Inc's DFL} = \frac{300,000(25-10) - 1,100,000}{[300,000(25-10)] - 1,100,000 - 500,000} = 1.172$$

4. An analyst gathered the following information regarding Violet Inc.:

   Number of units sold = 500,000

   Contribution margin per unit = $22

   Fixed operating costs = $1,500,000

   Fixed financing costs = $400,000

   Which of the following is *most accurate*?

	Degree of financial leverage	Degree of total leverage
A	1.158	1.044
B	1.044	1.209
C	1.158	1.209

Answer: B

$$\text{Degree of financial leverage} = \frac{Q \times (P-V) - F}{Q \times (P-V) - F - C}$$

$$DFL = \frac{(500,000 \times 22) - 1,500,000}{(500,000 \times 22) - 1,500,000 - 400,000} = 1.044$$

$$\text{Degree of total leverage} = \frac{Q \times (P-V)}{Q \times (P-V) - F - C}$$

$$DTL = \frac{(500,000 \times 22)}{(500,000 \times 22) - 1,500,000 - 400,00} = 1.209$$

Use the following information regarding Beta Inc. to answer Questions 5 to 10:

Number of units sold = 450,000

Sales price per unit = $15

Variable cost per unit = $6

Degree of operating leverage = 1.30645

Degree of financial leverage = 1.08772

5. Beta Inc.'s fixed operating costs are *closest to*:

A. $950,000

B. $750,000

C. $850,000

Answer: A

$$\text{Degree of operating leverage} = \frac{Q \times (P-V)}{Q \times (P-V) - F}$$

$$1.30645 = \frac{450,000(15-6)}{[450,000(15-6)] - F}$$

$$F = 4,050,000 - \frac{4,050,000}{1.30645} = \$949,996.1728$$

6. Beta Inc.'s fixed financial costs are *closest to*:

A. $266,131

B. $258,066

C. $250,000

Answer: C

$$\text{Degree of financial leverage} = \frac{Q \times (P-V) - F}{Q \times (P-V) - F - C}$$

$$1.08772 = \frac{[450,000(15-6)] - 949,996.1728}{[450,000(15-6)] - 949,996.1728 - C}$$

$$C = 3,100,003.827 - \frac{3,100,003.827}{1.08772} = \$250,002.1474$$

7. Beta Inc.'s degree of total leverage is *closest to*:

   A. 1.2011

   B. 1.4211

   C. 1.2411

   Answer: B

   Degree of total leverage = DOL × DFL

   DTL = 1.30645 × 1.08772 = 1.4211

8. Which of the following statements is *most accurate*?

   A. Beta Inc.'s operating income will be more sensitive to changes in the number of units sold at higher sales volumes.

   B. Beta Inc.'s net income will be more sensitive to changes in operating income if fixed financing costs fall to $200,000.

   C. Beta Inc.'s net income will be less sensitive to changes in the number of units sold if fixed financing costs fall to $200,000.

   Answer: C

   A company's net income will be less sensitive to changes in the number of units sold if fixed financing costs fall to $200,000.

   A company's operating income will be less sensitive to changes in the number of units sold at higher sales volumes.

   A company's net income will be less sensitive to changes in operating income if fixed financing costs fall to $200,000.

9. Beta Inc.'s breakeven number of units is *closest to*:

   A. 77,777 units

   B. 133,333 units

   C. 65,770 units

   Answer: B

$$\text{Breakeven number of units} = \frac{F + C}{P - V}$$

$$\text{Breakeven number of units} = \frac{949,996.1728 + 250,002.1474}{15 - 6} = 133,333.1467$$

10. Beta Inc.'s operating breakeven number of units is *closest to*:

    A. 94,444 units

    B. 83,333 units

    C. 105,555 units

    Answer: C

    Operating breakeven point = F / (P – V)

    Operating breakeven point = 949,996.1728 / (15 – 6) = 105,555.1303

11. Consider the following statements:

    Statement 1: A company's DOL does not vary with the number of units produced and sold.

    Statement 2: The higher the proportion of variable costs in a company's cost structure, the higher its earnings volatility.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are incorrect.

    Answer: C

    A company's DOL is **different** at different levels of sales.

The higher the proportion of **fixed** costs in a company's cost structure, the higher its earnings volatility.

12. At the point where operating income equals zero, which of the following is *most likely*?

    A. DOL is negative.

    B. Operating income is not very sensitive to changes in operating income.

    C. DOL is undefined.

    Answer: C

    DOL is undefined when operating income equals zero.

    It is negative when the company makes **operating losses** and is **most sensitive** to changes in operating income when operating income equals zero.

13. Which of the following statements is *least likely*?

    A. Management has more control over a company's degree of financial leverage than its degree of operating leverage.

    B. The degree of financial leverage is different at different levels of operating income.

    C. All other things remaining the same, a company with a larger ratio of tangible assets to intangible assets will be able to use less financial leverage.

    Answer: C

    All other things remaining the same, a company with a larger ratio of tangible assets to intangible assets will be able to use more financial leverage, as it will be able to use its tangible assets to collateralize its borrowings.

14. Consider the following statements:

    Statement 1: The DOL measures the sensitivity of net income to changes in the number of units sold.

    Statement 2: The DFL measures the sensitivity of net income to changes in operating income.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: B

The DOL measures the sensitivity of **operating** income to changes in the number of units sold.

15. Which of the following is *least likely* directly related to changes in the number of units that a company produces and sells?

A. The degree of financial leverage

B. The degree of total leverage

C. The degree of operating leverage

Answer: A

The DTL and DOL are different at different levels of units sold. The DFL is different at different levels of operating earnings.

16. Consider the following statements:

Statement 1: Under Chapter 7 bankruptcy, the original business ceases to exist.

Statement 2: A company with high financial costs is less likely to undergo successful reorganization than a company with higher operating costs because operating costs can be controlled.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: A

Under Chapter 7 bankruptcy (liquidation) the original business ceases to exist.

A company with high financial costs is more likely to undergo successful reorganization that a company with higher operating costs because the company can negotiate with creditors and grant them equity in the company in return for their claims on the company.

Reading 38: Dividends and Share Repurchases: Basics

Use the following information regarding Alpha Inc. to answer Questions 1 to 6:

Alpha Inc. has 5 million shares outstanding. The stock is currently trading for \$40, with an EPS of \$1.60 and a P/E multiple of 25. The company's directors announce a 10% stock dividend.

1. The company's EPS after the stock dividend will be *closest to*:

   A. \$1.45

   B. \$1.36

   C. \$1.76

2. The company's stock price after the stock dividend will be *closest to*:

   A. \$44.00

   B. \$36.36

   C. \$40.00

3. The total market value of the company's stock after the stock dividend will *most likely* be:

   A. Higher than before the stock dividend.

   B. Lower than before the stock dividend.

   C. The same as before the stock dividend.

4. Given that Sonia had initially purchased 1,200 shares of Alpha Inc. for \$36/share, her cost per share after the stock dividend will be *closest to*:

   A. \$30.37

   B. \$36.00

   C. \$32.73

5. The company's P/E multiple after the stock dividend will *most likely*

be:

A. Higher than before the stock dividend.

B. Lower than before the stock dividend.

C. Same as that before the stock dividend.

6. A stock dividend will *most likely*:

A. Worsen the company's liquidity ratios.

B. Worsen the company's solvency ratios.

C. Have no effect on either the company's liquidity or solvency ratios.

Use the following information to answer Questions 7 to 10:

Jeremy Traders has 30 million shares outstanding. The stock is currently trading for $60, with an EPS of $2.50 and a P/E multiple of 24. The company earns net income of $200 million for the year and pays out an annual dividend of $1.50 per share. The board of directors is considering a 3-for-2 stock split.

7. The company's earnings per share after the stock split will be *closest to*:

A. $1.67

B. $2.50

C. $1.00

8. The company's stock price after the stock split will be *closest to*:

A. $60

B. $40

C. $45

9. The company's dividend yield after the stock split will be *closest to*:

A. 1.00%

B. 2.22%

C. 2.50%

10. Given that an investor initially purchased 1,000 shares of the company at $50 per share, her cost per share after the split will be *closest to*:

A. $25.00

B. $50.00

C. $33.33

11. Patria Associates has 10 million shares outstanding and each share is currently worth $50. The company made $35 million in after-tax profits during 2010 and plans to buy back shares worth $11 million at the end of the year. Given that the company will be able to repurchase the shares at a 10% premium to the current market price, the company's EPS after the share repurchase will be *closest to*:

A. $3.50

B. $3.57

C. $3.65

Use the following information to answer Questions 12 to 14:

Pluto Manufacturers plans to repurchase $10 million worth of common stock with borrowed funds. The following information is provided:

Repurchase price = $25

Net income after tax = $120 million

EPS before repurchase = $1.5

12. Given that the company finances the repurchase by borrowing at an after-tax interest rate of 12.0%, its EPS after the repurchase will be *closest to*:

A. $1.49

B. $1.50

C. $1.52

13. Given that the company finances the repurchase by borrowing at an after-tax interest rate of 6.0%, its EPS after the repurchase will *most likely* be:

A. Higher than before the repurchase.

B. Lower than before the repurchase.

C. Same as that before the repurchase.

14. The following information relates to Gamma Corporations:

    Stock price = $40

    Number of shares outstanding = 5 million

    Repurchase amount = $1.2 million

    Book value of equity = $300 million

    The company's book value per share after the repurchase is *closest to*:

    A. $60.00

    B. $60.12

    C. $60.36

15. The payment of which of the following *least likely* results in a decrease in retained earnings?

    A. Stock dividend

    B. Stock split

    C. Special dividend

16. Consider the following statements:

    Statement 1: Stock dividendsmay result in an investor having to pay tax on cash that he does not actually receive.

    Statement 2: A 3-for-2 stock split would leave an investor with the same number of shares as a 50% stock dividend.

    Which of the following is *most likely*?

    A. Both statements are incorrect.

    B. Only one statement is correct.

    C. Both statements are correct.

17. Which of the following is *least likely* to result in a decrease in a company's stock price?

    A. Reverse stock split

    B. Stock dividend

C. Regular dividend

18. Consider the following statements:

    Statement 1: When a company repurchases stock with idle cash, the higher the price at which it repurchases its stock relative to the current market price, the more significant the increase in EPS.

    Statement 2: When a company repurchases stock with borrowed funds, if the cost of borrowing is lower than the company's dividend yield, EPS will rise after the repurchase.

    Which of the following is *most likely*?

    A. Both statements are incorrect.

    B. Only one statement is correct.

    C. Both statements are correct.

19. Consider the following statements:

    Statement 1: If the stock price is lower than the book value per share, a company's book value per share will increase after a share repurchase.

    Statement 2: There is a tax advantage to distributing cash through repurchases in markets where capital gains are taxed at a higher rate than dividends.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are correct.

Reading 38: Dividends and Share Repurchases: Basics

Use the following information regarding Alpha Inc. to answer Questions 1 to 6:

Alpha Inc. has 5 million shares outstanding. The stock is currently trading for $40, with an EPS of $1.60 and a P/E multiple of 25. The company's directors announce a 10% stock dividend.

1. The company's EPS after the stock dividend will be *closest to*:

   A. $1.45

   B. $1.36

   C. $1.76

   Answer: A

   Shares outstanding after the stock dividend = 5,000,000 × 1.1 = 5,500,000

   Therefore, EPS after the stock dividend = (1.6 × 5,000,000) / 5,500,000 = $1.4545

2. The company's stock price after the stock dividend will be *closest to*:

   A. $44.00

   B. $36.36

   C. $40.00

   Answer: B

   Stock price after the stock dividend = (40 × 5,000,000) / 5,500,000 = $36.3636

3. The total market value of the company's stock after the stock dividend will *most likely* be:

   A. Higher than before the stock dividend.

   B. Lower than before the stock dividend.

C. The same as before the stock dividend.

Answer: C

The market value of a company does not change in response to a stock dividend.

4. Given that Sonia had initially purchased 1,200 shares of Alpha Inc. for \$36/share, her cost per share after the stock dividend will be *closest to*:

   A. \$30.37

   B. \$36.00

   C. \$32.73

   Answer: C

   Number of share held after the stock dividend = 1,200 × 1.1 = 1,320

   Therefore, cost per share after the stock dividend = (36 × 1,200) / 1,320 = \$32.7273

5. The company's P/E multiple after the stock dividend will *most likely* be:

   A. Higher than before the stock dividend.

   B. Lower than before the stock dividend.

   C. Same as that before the stock dividend.

   Answer: C

   The company's P/E multiple does not change in response to a stock dividend.

6. A stock dividend will *most likely*:

   A. Worsen the company's liquidity ratios.

   B. Worsen the company's solvency ratios.

   C. Have no effect on either the company's liquidity or solvency ratios.

   Answer: C

   Stock dividends have no effect on a company's capital structure. Retained earnings fall by the value of stock dividends paid, but there is an offsetting increase in contributed capital so there is no change in shareholders' equity.

Use the following information to answer Questions 7 to 10:

Jeremy Traders has 30 million shares outstanding. The stock is currently trading for \$60, with an EPS of \$2.50 and a P/E multiple of 24. The company earns net income of \$200 million for the year and pays out an annual dividend of \$1.50 per share. The board of directors is considering a 3-for-2 stock split.

7. The company's earnings per share after the stock split will be *closest to*:

   A. \$1.67

   B. \$2.50

   C. \$1.00

   Answer: A

   Number of shares after the stock split = 30,000,000 × 3/2 = 45,000,000

   Therefore, EPS after the stock split = (2.5 × 30,000,000) / 45,000,000 = \$1.6667

8. The company's stock price after the stock split will be *closest to*:

   A. \$60

   B. \$40

   C. \$45

   Answer: B

   Stock price after the stock split = (60 × 30,000,000) / 45,000,000 = \$40

9. The company's dividend yield after the stock split will be *closest to*:

   A. 1.00%

   B. 2.22%

   C. 2.50%

Answer: C

Dividend yield = Dividend per share / Stock price per share

Dividend per share = (1.5 × 30,000,000) / 45,000,000 = $1

Therefore, dividend yield = 1 / 40 = 2.50%

10. Given that an investor initially purchased 1,000 shares of the company at $50 per share, her cost per share after the split will be *closest to*:

    A. $25.00

    B. $50.00

    C. $33.33

    Answer: C

    Number of shares held after the stock split = 1,000 × 3/2 = 1,500

    Therefore, cost per share after the stock split = (50 × 1,000) / 1,500 = $33.33

11. Patria Associates has 10 million shares outstanding and each share is currently worth $50. The company made $35 million in after-tax profits during 2010 and plans to buy back shares worth $11 million at the end of the year. Given that the company will be able to repurchase the shares at a 10% premium to the current market price, the company's EPS after the share repurchase will be *closest to*:

    A. $3.50

    B. $3.57

    C. $3.65

    Answer: B

    The company will be able to repurchase the shares at $55 per share.

    Therefore, number of shares repurchased = 11,000,000 / 55 = 200,000

    Number of shares outstanding after the repurchase = 10,000,000 – 200,000 = 9,800,000

    Therefore, EPS = 35,000,000 / 9,800,000 = $3.5714

Use the following information to answer Questions 12 to 14:

Pluto Manufacturers plans to repurchase $10 million worth of common stock with borrowed funds. The following information is provided:

Repurchase price = $25

Net income after tax = $120 million

EPS before repurchase = $1.5

12. Given that the company finances the repurchase by borrowing at an after-tax interest rate of 12.0%, its EPS after the repurchase will be *closest to*:

    A. $1.49

    B. $1.50

    C. $1.52

    Answer: A

    Number of shares initially outstanding = Net income / EPS = 120,000,000 / 1.5 = 80 million

    Number of shares repurchased = 10,000,000 / 25 = 400,000

    Therefore, number of shares outstanding after the repurchase:

    = 80,000,000 – 400,000 = 79,600,000

    EPS after the repurchase:

    = (Net income after tax – After-tax interest expense) / Shares outstanding after the repurchase

    = [120,000,000 – (10,000,000 × 0.12)] / 79,600,000 = $1.4924

13. Given that the company finances the repurchase by borrowing at an after-tax interest rate of 6.0%, its EPS after the repurchase will *most likely* be:

    A. Higher than before the repurchase.

    B. Lower than before the repurchase.

    C. Same as that before the repurchase.

    Answer: C

Earnings yield = EPS / Stock price = 1.5 / 25 = 6.00%

If the company's after-tax cost of borrowing equals its earnings yield, its EPS will remain the same after the share repurchase.

14. The following information relates to Gamma Corporations:

    Stock price = $40

    Number of shares outstanding = 5 million

    Repurchase amount = $1.2 million

    Book value of equity = $300 million

    The company's book value per share after the repurchase is *closest to*:

    A. $60.00

    B. $60.12

    C. $60.36

    Answer: B

    Number of share repurchased = 1,200,000 / 40 = 30,000

    Number of shares outstanding after the repurchase = 5,000,000 – 30,000 = 4,970,000

    Book value of equity after the share repurchase = 300,000,000 – 1,200,000 = $298.8 million

    Therefore, book value per share after the repurchase = 298.8m / 4.97m = $60.1207

15. The payment of which of the following *least likely* results in a decrease in retained earnings?

    A. Stock dividend

    B. Stock split

    C. Special dividend

    Answer: B

    A stock split has no impact on any shareholders' equity accounts.

    A stock dividend transfers reserves from retained earnings to contributed capital.

A cash dividend reduces retained earnings and cash.

16. Consider the following statements:

    Statement 1: Stock dividends may result in an investor having to pay tax on cash that he does not actually receive.

    Statement 2: A 3-for 2 stock split would leave an investor with the same number of shares as a 50% stock dividend.

    Which of the following is *most likely*?

    A. Both statements are incorrect.

    B. Only one statement is correct.

    C. Both statements are correct.

    Answer: B

    Statement 2 is correct.

    Stock dividends are generally not taxable. Investments made through Dividend Reinvestment Plans may cause an investor to have to pay taxes on cash that he does not actually receive.

17. Which of the following is *least likely* to result in a decrease in a company's stock price?

    A. Reverse stock split

    B. Stock dividend

    C. Regular dividend

    Answer: A

    A reverse stock split increases a company's stock price.

18. Consider the following statements:

    Statement 1: When a company repurchases stock with idle cash, the higher the price at which it repurchases its stock relative to the current market price, the more significant the increase in EPS.

    Statement 2: When a company repurchases stock with borrowed funds, if the cost of borrowing is lower than the company's dividend yield, EPS will rise after the repurchase.

Which of the following is *most likely*?

A. Both statements are incorrect.

B. Only one statement is correct.

C. Both statements are correct.

Answer: A

When a company repurchases stock with idle cash, the higher the price at which it repurchases its stock relative to the current market price, the **less** significant the increase in EPS.

When a company repurchases stock with borrowed funds, if the cost of borrowing is lower than the company's **earnings** yield, EPS will rise after the repurchase.

19. Consider the following statements:

Statement 1: If the stock price is lower than the book value per share, a company's book value per share will increase after a share repurchase.

Statement 2: There is a tax advantage to distributing cash through repurchases in markets where capital gains are taxed at a higher rate than dividends.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: A

There is a tax advantage to distributing cash through repurchases in markets where capital gains are taxed at a **lower** rate than dividends.

Reading 39: Working Capital Management

1. A company has a current and quick ratio of 2.8 and 1.6 respectively. If the company's current liabilities amount to $120 million, the amount of inventory that the company has is *closest to*:

   A. $336 million.

   B. $192 million.

   C. $144 million.

   Use the following information to answer Questions 2 and 3:

	$ million
Credit sales	30,000
Cost of goods sold	25,000
Accounts receivable	4,000
Opening inventory	5,000
Closing inventory	2,500
Accounts payable	2,000

2. The operating cycle for the company is *closest to*:

   A. 74.22 days.

   B. 103.42 days.

   C. 1.67 days.

3. The net operating cycle for the company is *closest to*:

   A. 1.67 days.

   B. 14.17 days.

   C. 70.98 days.

4. A company has been offered credit terms of "1/10 net 40." What is the effective borrowing cost to the company if it pays on the 30^{TH} day?

   A. 20.13%

B. 13%

C. 9.6%

5. James is considering borrowing $1.5 million for a month by issuing commercial paper at 6.5% with a dealer's commission of 1/4 percent and a back-up line cost of 1/3 percent. Both of these costs will be assessed on the $1.5 million of commercial paper issued. The effective borrowing cost for James is *closest to*:

   A. 7.08%

   B. 7.12%

   C. 5.9%

6. Which of the following is *least likely* a secondary source of liquidity?

   A. Short-term funds

   B. Liquidating assets

   C. Negotiating debt contracts

7. A drag on liquidity is *most likely* caused by:

   A. Obsolete inventory.

   B. Accelerating payments.

   C. Limits on short-term lines of credit.

8. A pull on liquidity is *least likely* caused by:

   A. Reduced credit limits.

   B. Uncollected receivables.

   C. Low existing levels of liquidity.

9. Which of the following companies has the *lowest* creditworthiness?

   A. A company with a high current ratio

   B. A company with a high number of days of receivables

   C. A company with a high inventory turnover

10. Which of the following will *least likely* lead to a decrease in the number of days of inventory?

A. Increasing the average inventory

B. Increasing the cost of goods sold

C. Increasing the inventory turnover

11. Consider the following statements:

    Statement 1: A collection period that is too low might suggest that customers are too slow in making payments and too much of the company's capital is tied up in accounts receivable.

    Statement 2: A low payables turnover ratio might indicate that the company is not making full use of available credit facilities.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

12. Which of the following will *most likely* lead to a decrease in the number of days of payables?

    A. Increasing cost of goods sold

    B. Increasing accounts payables

    C. Decreasing payables turnover

13. An analyst gathered the following information:

    Inventory = $136,000

    Cost of goods sold = $721,000

    Number of days of receivables = 42 days

    Number of days of payables = 33 days

    The company's operating cycle is *closest to*:

    A. 78 days.

    B. 47 days.

    C. 111 days.

14. An analyst gathered the following information:

Net sales = $775,000 ($370,000 of cash sales)

Accounts receivable = $121,500

Number of days of inventory = 115.2

Purchases = $112,450

Accounts payables = $31,230

The company's cash conversion cycle is *closest to*:

A. 225 days.

B. 123 days.

C. 154 days.

15. Which of the following cash forecasts are *least* reliable?

A. Medium term

B. Short term

C. Long term

16. Which of the following cash forecasts are made using projection models and averages?

A. Short term

B. Long term

C. Medium term

17. Medium-term cash forecasting is *most likely* used in:

A. Long-range financial position.

B. Daily cash management.

C. Planning financial transactions.

18. Which of the following is *least likely* an inflow of cash?

A. Tax refunds

B. Funds transferred from subsidiaries

C. Investments made

19. A discount instrument has a face value of $1,000 and a coupon rate of

6%. Given that the bond has 2 months remaining till maturity, its purchase price today is *closest to*:

A. $1,010

B. $990

C. $1,000

20. A 180-day U.S. T-bill with a par value of $1,000 is issued at a discount of 7%. Its money market yield is *closest to*:

A. 7.35%

B. 7.00%

C. 7.25%

21. A 270-day U.S. T-bill with a par value of $1,000 is issued at a discount of 6%. Its discount basis yield is *closest to*:

A. 6.28%

B. 6.00%

C. 6.37%

22. A 90-day U.S. T-bill with a par value of $1,000 is issued at a discount of 9%. Its bond equivalent yield is *closest to*:

A. 9.13%

B. 9.21%

C. 9.34%

23. Consider the following statements:

Statement 1: An investment policy statement describes the types of investments that should be considered for inclusion in the portfolio without any restrictions on the maximum proportion of each type of security.

Statement 2: The investment policy statement should be evaluated on the basis of its ability to generate the highest returns.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

24. Consider the following statements:

Statement 1: In evaluating management of accounts receivables, the weighted average collection method is preferred, as it requires less information than the number of days of receivables.

Statement 2: The weighted average collection period measures how long it takes a company to collect cash from its customers irrespective of the changes in sales and the level of sales.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

25. Tornado Corporations has been offered trade credit terms of 3/10 net 20. Given that the company pays the amount on the 15^{TH} day, the cost of trade credit is *closest to*:

A. 824%

B. 110%

C. 74%

26. Mercury Traders has been offered trade credit terms of 2/15 net 40. Given that the company pays the amount on the 35^{TH} day, the cost of trade credit is *closest to*:

A. 23%

B. 337%

C. 45%

27. Which of the following sources of short-term finance are *least likely* used by small companies?

A. Collateralized loan

B. Discounted receivables

C. Nonbank finance companies

28. Which of the following sources of short-term finance are *most likely* used by small companies?

    A. Overdraft line

    B. Revolving credit agreement

    C. Uncommitted lines of credit

29. Which of the following sources of short-term finance is *least likely* used by large companies?

    A. Factoring

    B. Regular lines of credit

    C. Commercial paper

30. Which of the following is the *least strong* form of short-term borrowing facility?

    A. Regular lines of credit

    B. Revolving credit agreements

    C. Uncommitted lines of credit

31. Which of the following is *least likely* a nonbank source of short-term finance?

    A. Commercial paper

    B. Factoring

    C. Nonbank finance companies

32. Alpha Industries wants to borrow $4.5 million for 4 months to finance a new project. The company has been offered bankers' acceptance at 7% (an all-inclusive rate). The cost of this source of finance to the company is *closest to*:

    A. 7.17%

    B. 70.4%

    C. 28.67%

33. Atlas Corporations is expected to be low on liquidity by $1.5 million for

the coming 2 months. The company's directors are evaluating the following options:

Option 1: Commercial paper at 7% with a dealer's commission of 1/5% and a backup line at cost of 1/2%.

Option 2: Drawing on a line of credit at 7% with a 0.3% commitment fee on the full amount: one-twelfth of the commitment fee is allocated to each month.

Option 3: Banker's acceptance at 8% which is an all-inclusive rate.

Which of the above options is the *least* costly to Atlas Corporations?

A. Option 3

B. Option 1

C. Option 2

Reading 39: Working Capital Management

1. A company has a current and quick ratio of 2.8 and 1.6 respectively. If the company's current liabilities amount to $120 million, the amount of inventory that the company has is *closest to*:

   A. $336 million.

   B. $192 million.

   C. $144 million.

   Answer: C

   Current ratio = Current assets / current liabilities

   Therefore, current assets = 2.8 × 120 = $336m

   Quick ratio = (Current assets – inventory) / current liabilities

   Therefore, inventory = 336 – (120 × 1.6) = $144 million

Use the following information to answer Questions 2 and 3:

	$ million
Credit sales	30,000
Cost of goods sold	25,000
Accounts receivable	4,000
Opening inventory	5,000
Closing inventory	2,500
Accounts payable	2,000

2. The operating cycle for the company is closest to:

   A. 74.22 days.

   B. 103.42 days.

   C. 1.67 days.

   Answer: B

   Average inventory = (5,000 + 2,500) / 2 = $3,750

   Number of days of inventory = 3,750 / (25,000/365) = 54.75 days

   Number of days of receivables = 4,000 / (30,000/365) = 48.67 days

   Therefore, operating cycle = DOH + DRO = 54.75 + 48.67 = 103.42 days

3. The net operating cycle for the company is *closest to*:

   A. 1.67 days.

   B. 14.17 days.

C. 70.98 days.

Answer: C

Purchases = Ending inventory + COGS – Beginning inventory

Purchases = 2,500 + 25,000 – 5,000

Purchases = $22,500

Number of days of payables = 2,000 / (22,500/365) = 32.44 days

Therefore, net operating cycle:

= No. of days of inventory + No. of days of receivable – No. of days of payables

= 103.42 – 32.44 = 70.98 days

4. A company has been offered credit terms of "1/10 net 40." What is the effective borrowing cost to the company if it pays on the 30^{TH} day?

   A. 20.13%

   B. 13%

   C. 9.6%

   Answer: A

   Cost = $\{1 + [0.01 / (1 – 0.01)]\}^{365/20} – 1 = 20.13\%$

5. James is considering borrowing $1.5 million for a month by issuing commercial paper at 6.5% with a dealer's commission of 1/4 percent and a back-up line cost of 1/3 percent. Both of these costs will be assessed on the $1.5 million of commercial paper issued. The effective borrowing cost for James is *closest to*:

   A. 7.08%

   B. 7.12%

   C. 5.9%

   Answer: B

$$\text{Borrowing cost} = \frac{(0.065 \times 1.5\text{m} \times 1/12) + (0.0025 \times 1.5\text{m} \times 1/12) + (0.0033 \times 1.5\text{m} \times 1/12)}{1.5\text{m} - (0.065 \times 1.5\text{m} \times 1/12)} \times 12$$

$$\text{Borrowing cost} = 7.12\%$$

6. Which of the following is *least likely* a secondary source of liquidity?

   A. Short-term funds

   B. Liquidating assets

   C. Negotiating debt contracts

   Answer: A

   Short-term funds are a primary source of liquidity.

7. A drag on liquidity is *most likely* caused by:

A. Obsolete inventory.

B. Accelerating payments.

C. Limits on short-term lines of credit.

Answer: A

A drag on liquidity occurs when there is a delay in cash coming into the company. The other options are a pull on liquidity, which occurs when cash leaves the company too quickly.

8. A pull on liquidity is *least likely* caused by:

A. Reduced credit limits

B. Uncollected receivables

C. Low existing levels of liquidity

Answer: B

"Uncollected receivables" is a drag on liquidity.

9. Which of the following companies has the *lowest* creditworthiness?

A. A company with a high current ratio

B. A company with a high number of days of receivables

C. A company with a high inventory turnover

Answer: B

A collection period that is too high might imply that customers are too slow in making payments and too much of the company's capital is tied up in accounts receivable.

10. Which of the following will *least likely* lead to a decrease in the number of days of inventory?

A. Increasing the average inventory

B. Increasing the cost of goods sold

C. Increasing the inventory turnover

Answer: A

Increasing the average inventory will increase the number of days of inventory.

11. Consider the following statements:

Statement 1: A collection period that is too low might suggest that customers are too slow in making payments and too much of the company's capital is tied up in accounts receivable.

Statement 2: A low payables turnover ratio might indicate that the company is not making full use of available credit facilities.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: B

A collection period that is too low might suggest that the company's credit policy is too strict, which might hurt sales.

A low payables turnover ratio could suggest that the company has trouble making payments on time.

12. Which of the following will *most likely* lead to a decrease in the number of days of payables?

    A. Increasing cost of goods sold

    B. Increasing accounts payables

    C. Decreasing payables turnover

    Answer: A

    Increasing cost of goods sold will increase the company's purchases, which will lead to a decrease in the number of days of payables.

13. An analyst gathered the following information:

    Inventory = $136,000

    Cost of goods sold = $721,000

    Number of days of receivables = 42 days

    Number of days of payables = 33 days

    The company's operating cycle is *closest to*:

    A. 78 days.

    B. 47 days.

    C. 111 days.

    Answer: C

    Number of days of inventory = 136,000 / (721,000 / 365) = 68.85 days

    Operating cycle = 68.85 + 42 = 110.85 days

14. An analyst gathered the following information:

    Net sales = $775,000 ($370,000 of cash sales)

    Accounts receivable = $121,500

    Number of days of inventory = 115.2

    Purchases = $112,450

    Accounts payables = $31,230

    The company's cash conversion cycle is *closest to*:

    A. 225 days.

    B. 123 days.

    C. 154 days.

    Answer: B

    Credit sales = 775,000 – 370,000 = $405,000

Number of days of receivables = 121,500 / (405,000 / 365) = 109.5 days

Number of days of payables = 31,230 / (112,450 / 365) = 101.37 days

Cash conversion cycle = 109.5 + 115.2 – 101.37 = 123.33 days

15. Which of the following cash forecasts are *least* reliable?

    A. Medium term

    B. Short term

    C. Long term

    Answer: C

    Long-term cash forecasts are not very reliable.

16. Which of the following cash forecasts are made using projection models and averages?

    A. Short term

    B. Long term

    C. Medium term

    Answer: C

    Medium-term forecasts are made using projection models and averages.

    Short-term forecasts are made using simple projections.

    Long-term forecasts are made using statistical models.

17. Medium-term cash forecasting is *most likely* used in:

    A. Long-range financial position.

    B. Daily cash management.

    C. Planning financial transactions.

    Answer: C

    Short-term cash forecasting is used in daily cash management.

    Medium-term cash forecasting is used in planning financial transactions.

    Long-term cash forecasting is used in long-range financial position.

18. Which of the following is *least likely* an inflow of cash?

    A. Tax refunds

    B. Funds transferred from subsidiaries

    C. Investments made

    Answer: C

    Investing is an outflow of cash.

19. A discount instrument has a face value of $1,000 and a coupon rate of 6%. Given that the bond has 2 months remaining till maturity, its purchase price today is *closest to*:

    A. $1,010

B. $990

C. $1,000

Answer: B

Purchase price = Face value – Discount in dollars

Purchase price = 1,000 – (0.06 × 2/12 × 1,000) = $990

20. A 180-day U.S. T-bill with a par value of $1,000 is issued at a discount of 7%. Its money market yield is *closest to*:

A. 7.35%

B. 7.00%

C. 7.25%

Answer: C

Purchase price = Face value – Unannualized discount

Purchase price = 1,000 – (0.07 × 1,000 × 180/360) = $965

Money market yield = [(Face value – Price) / Price] × (360 / Days till maturity)

Money market yield = [(1,000 – 965) / 965] × (360 / 180) = 7.25%

21. A 270-day U.S. T-bill with a par value of $1,000 is issued at a discount of 6%. Its discount basis yield is *closest to*:

A. 6.28%

B. 6.00%

C. 6.37%

Answer: B

Purchase price = Face value – Unannualized discount

Purchase price = 1,000 – (0.06 × 1,000 × 270/360) = $955

Discount basis yield = [(Face value – Price) / Face value] × (360 / Days till maturity)

Discount basis yield = [(1,000 – 955) / 1,000] × (360 / 270) = 6.00%

22. A 90-day U.S. T-bill with a par value of $1,000 is issued at a discount of 9%. Its bond equivalent yield is *closest to*:

A. 9.13%

B. 9.21%

C. 9.34%

Answer: C

Purchase price = Face value – Unannualized discount

Purchase price = 1,000 – (0.09 × 1,000 × 90/360) = $977.5

Bond equivalent yield = [(Face value – Price) / Price] × (365 / Days till maturity)

Bond equivalent yield = [(1,000 – 977.5) / 977.5] × (365 / 90) = 9.34%

23. Consider the following statements:

Statement 1: An investment policy statement describes the types of investments that should be considered for inclusion in the portfolio without any restrictions on the maximum proportion of each type of security.

Statement 2: The investment policy statement should be evaluated on the basis of its ability to generate the highest returns.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

An investment policy statement describes the types of investment that should be considered for inclusion in the portfolio. The policy also contains restrictions on the maximum proportion of each type of security in the portfolio.

The investment policy statement should be evaluated on the basis of how well it meets the goals of short-term investments (i.e., its ability to generate competitive returns without exposing the company to undue risks).

24. Consider the following statements:

Statement 1: In evaluating management of accounts receivables, the weighted average collection method is preferred, as it requires less information than the number of days of receivables.

Statement 2: The weighted average collection period measures how long it takes a company to collect cash from its customers irrespective of the changes in sales and the level of sales.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

The only drawback of the weighted average collection method is that it requires more information than the number of days of receivables.

25. Tornado Corporations has been offered trade credit terms of 3/10 net 20. Given that the company pays the amount on the 15^{TH} day, the cost of trade credit is *closest to*:

A. 824%

B. 110%

C. 74%

Answer: A

Cost of trade credit on the 15^{TH} day:

$\{[1 + (\text{Discount} / 1 - \text{Discount})]^{365 / \text{Number of days beyond discount period}}\} - 1$

$\{[1 + (0.03 / 1 - 0.03)]^{365 / 5}\} - 1 = 824\%$

26. Mercury Traders has been offered trade credit terms of 2/15 net 40. Given that the company pays the amount on the 35^{TH} day, the cost of trade credit is *closest to*:

A. 23%

B. 337%

C. 45%

Answer: C

Cost of trade credit on the 35^{TH} day:

$\{[1 + (\text{Discount} / 1 - \text{Discount})]^{365 / \text{Number of days beyond discount period}}\} - 1$

$\{[1 + (0.02 / 1 - 0.02)]^{365 / 20}\} - 1 = 45\%$

27. Which of the following sources of short-term finance are *least likely* used by small companies?

A. Collateralized loan

B. Discounted receivables

C. Nonbank finance companies

Answer: B

Discounted receivables are used by large companies.

28. Which of the following sources of short-term finance are *most likely* used by small companies?

A. Overdraft line

B. Revolving credit agreement

C. Uncommitted lines of credit

Answer: A

Overdraft lines are used by companies of all sizes.

29. Which of the following sources of short-term finance is *least likely* used by large companies?

A. Factoring

B. Regular lines of credit

C. Commercial paper

Answer: A

Factoring is used by smaller companies.

30. Which of the following is the *least strong* form of short-term borrowing facility?

A. Regular lines of credit

B. Revolving credit agreements

C. Uncommitted lines of credit

Answer: C

Uncommitted lines of credit are the weakest and least reliable form of borrowing.

31. Which of the following is *least likely* a nonbank source of short-term finance?

A. Commercial paper

B. Factoring

C. Nonbank finance companies

Answer: B

Factoring is a short-term source of finance available from banks.

32. Alpha Industries wants to borrow $4.5 million for 4 months to finance a new project. The company has been offered bankers' acceptance at 7% (an all-inclusive rate). The cost of this source of finance to the company is *closest to*:

A. 7.17%

B. 70.4%

C. 28.67%

Answer: A

Bankers' acceptance cost = Interest / (Loan amount – Interest)

Interest = 0.07 × 4,500,000 × 4/12 = $105,000

Bankers' acceptance cost = [105,000 / (4,500,000 – 105,000)] × 12/4 = 7.17%

33. Atlas Corporations is expected to be low on liquidity by $1.5 million for the coming 2 months. The company's directors are evaluating the following options:

Option 1: Commercial paper at 7% with a dealer's commission of 1/5% and a backup line at cost of 1/2%.

Option 2: Drawing on a line of credit at 7% with a 0.3% commitment fee on the full amount: one-twelfth of the commitment fee is allocated to each month.

Option 3: Banker's acceptance at 8% which is an all-inclusive rate.

Which of the above options is the *least* costly to Atlas Corporations?

A. Option 3

B. Option 1

C. Option 2

Answer: C

Option 1:

Cost of commercial paper:

(Interest + Dealer's commission + Backup costs) / (Loan amount – Interest)

Interest = 0.07 × 1,500,000 × 2/12 = $17,500

Dealer's commission = 0.002 × 1,500,000 × 2/12 = $500

Backup costs = 0.005 × 1,500,000 × 2/12 = $1,250

Cost of commercial paper = [(17,500 + 500 + 1,250) / (1,500,000 – 17,500)] × 12/2

Cost of commercial paper = 7.79%

Option 2:

Line of credit cost = (Interest + Commitment fee) / Loan amount

Interest = 0.07 × 1,500,000 × 2/12 = $17,500

Commitment fee = 0.003 × 1,500,000 × 2/12 = $750

Line of credit cost = [(17,500 + 750) / 1,500,000] × 12/2 = 7.3%

Option 3:

Bankers' acceptance cost = Interest / (Loan amount – Interest)

Interest = 0.08 × 1,500,000 × 2/12 = $20,000

Bankers' acceptance cost = [20,000 / (1,500,000 – 20,000)] × 12/2 = 8.11%

Reading 40: The Corporate Governance of Listed Companies: A Manual for Investors

1. Good corporate governance practices seek to ensure that:

   A. The board takes management's advice in working for the betterment of the company.

   B. Appropriate controls and procedures are in place covering management's activities in running the company.

   C. Shareholders are treated based on their share in the company.

2. Consider the following statements:

   Statement 1: To ensure that shareholders' interests are protected, the board chair should also be the CEO of the company.

   Statement 2: Management should be able to elect members to the board as they are more familiar with the nature of work and better suited to hire someone with the required skills.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

3. Which of the following statements is *least accurate*?

   A. In order to protect shareholders' interests, management should help the board in hiring external consultants to guide them in decision-making.

   B. A company should disclose all material related-party transactions or commercial relationships that it has with the board members.

   C. Board members should report their activities at least annually to shareholders.

4. In which of the following situations is a board member *most likely* to be considered independent?

A. She has a material relationship with an entity which has a cross-directorship relationship with the company.

B. She is acquainted with a director of one of the subsidiary companies.

C. She has family terms with an external auditor of the company.

5. Which of the following is *least likely* a condition that ensures protection of shareholders' interests in the company?

   A. The board should comprise of many members.

   B. The remuneration committee should be able to hire external advisors to help determine appropriate compensation for key executives.

   C. The external auditor should be independent of management influence.

6. Investors should evaluate the qualifications of board members based on whether they:

   A. Are able to make informed decisions about the company's future.

   B. Report the board's performance to the shareholders.

   C. Have committed to the needs of the management.

7. To be able to act with care and competence, board members should *least likely* have relevant understanding of the company's:

   A. Strategy going forward.

   B. Financial.

   C. Past corporate governance practices.

8. Information about mechanisms related to board elections and structure is *least likely* to be found in:

   A. The company's by-laws and articles of organization.

   B. The corporate governance section of the company's annual report.

   C. Notice of the company's annual general meeting.

9. Information about related-party transactions is *most likely* to be found in:

A. The annual corporate governance report to shareholders.

B. The company's articles of organization.

C. The annual proxy statement.

10. Which of the following statements regarding a company's code of ethics is *most accurate*?

    A. It provides guidance for addressing conflicts of interest that occur within the organization only.

    B. It sets standards for ethical conduct based solely on the principles of integrity.

    C. It prohibits any practice that would provide advantages to company insiders that are not also offered to shareholders.

11. Good corporate governance practices *least likely* require the creation of a committee for:

    A. Overseeing the audit of the company's financial reports.

    B. Overseeing compliance with regulatory requirements.

    C. Setting executive remuneration/compensation.

12. Consider the following statements:

    Statement 1: The remuneration committee should ensure that the rewards and incentives offered to management are consistent with the best long-term interests of shareholders.

    Statement 2: The U.S. companies must disclose whether they have at least two financial experts on their audit committees and their names.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

13. The audit committee is *least likely* responsible for ensuring that:

    A. The independent auditors' priorities are aligned with the best interests of the management.

B. The independent auditors have authority over the audit of the entire corporate group, including foreign subsidiaries and affiliated companies.

C. The information included in the financial statements is complete, accurate, reliable, relevant, verifiable, and timely.

14. In order to assess whether the Nominations Committee has recruited board members who act in their best interests, shareholders should *least likely* review:

    A. Whether the company has a succession plan for executive management in the event of unforeseen circumstances.

    B. Whether the terms and conditions of options granted to management and employees are reasonable.

    C. The composition, background, and areas of expertise of existing board members, and whether new nominees complement the board's current portfolio of talents.

15. In order to protect shareholders' voting rights, a company should *most likely*:

    A. Coordinate the timing of its annual general meeting with other companies in its region to ensure that all of them hold their meetings on the same day but in different locations.

    B. Use a third-party entity to count shareholder votes.

    C. Require shareholders' presence at the annual general meeting for them to vote.

16. Consider the following statements:

    Statement 1: Cumulative voting decreases the likelihood that shareholders' interests are represented on the board.

    Statement 2: Information concerning confidentiality of voting rights is found in the proxy statement.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

C. Both statements are correct.

17. In order to protect shareholders' interests companies should *most likely*:

    A. Provide large quantities of stock options to management in order to align their interests with those of shareholders.

    B. Introduce anti-takeover mechanisms.

    C. Give shareholders the right to vote on certain aspects of executive compensation.

18. Consider the following statements:

    Statement 1: Good corporate governance practices require a company to have different classes of common shares that separate the voting rights of those shares from their economic value.

    Statement 2: When reviewing a company's anti-takeover measures, investors should consider whether change-in-control provisions will trigger large severance packages and other payments to company executives.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

Reading 40: The Corporate Governance of Listed Companies: A Manual for Investors

1. Good corporate governance practices seek to ensure that:

   A. The board takes management's advice in working for the betterment of the company.

   B. Appropriate controls and procedures are in place covering management's activities in running the company.

   C. Shareholders are treated based on their share in the company.

   Answer: B

   Good corporate governance practices seek to ensure that:

   - The board and its committees are structured to act independently from management, individual, or entities that have control over management, and other nonshareholder groups.
   - All shareholders have the same right to participate in the governance of the company and receive fair treatment from the board and management.

2. Consider the following statements:

   Statement 1: To ensure that shareholders' interests are protected, the board chair should also be the CEO of the company.

   Statement 2: Management should be able to elect members to the board, as they are more familiar with the nature of work and better suited to hire someone with the required skills.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

   Answer: B

   If the board chair is also the CEO of the company, then it would give one person too much influence over the company and may impair the ability and willingness of independent board members to exercise fair judgement.

Shareholders, not the management, should be able to elect members to the board.

3. Which of the following statements is *least accurate*?

   A. In order to protect shareholders' interests, management should help the board in hiring external consultants to guide them in decision-making.

   B. A company should disclose all material related-party transactions or commercial relationships that it has with the board members.

   C. Board members should report their activities at least annually to shareholders.

   Answer: A

   Board members should be able to hire experienced external consultants to guide them in decision-making without having to take approval from management.

4. In which of the following situations is a board member *most likely* to be considered independent?

   A. She has a material relationship with an entity which has a cross-directorship relationship with the company.

   B. She is acquainted with a director of one of the subsidiary companies.

   C. She has family terms with an external auditor of the company.

   Answer: B

   In order to be independent, a board member must not have a material business or other relationship with:

   - Any entity which has cross-directorship relationship with the company.
   - Company advisers (including external auditors) and their families.

5. Which of the following is *least likely* a condition that ensures

protection of shareholders' interests in the company?

A. The board should comprise of many members.

B. The remuneration committee should be able to hire external advisors to help determine appropriate compensation for key executives.

C. The external auditor should be independent of management influence.

Answer: A

The board needs to be of an appropriate size for the facts and circumstances of the company. A large board may have difficulty coordinating its members' views, be slow to act, and defer more frequently to the chief executive. A small board may lack depth of experience and counsel, and may not be able to adequately spread the workload among its members to operate effectively.

6. Investors should evaluate the qualifications of board members based on whether they:

   A. Are able to make informed decisions about the company's future.

   B. Report the board's performance to the shareholders.

   C. Have committed to the needs of the management.

   Answer: A

   Investors should evaluate the qualifications of board members based on whether they:

   - Regularly attend board and committee meetings.
   - Have committed to the needs of shareholders.

7. To be able to act with care and competence, board members should *least likely* have relevant understanding of the company's:

   A. Strategy going forward.

   B. Financial position.

   C. Past corporate governance practices.

   Answer: C

To be able to act with care and competence, board member should have relevant understanding of the company's:

- Principal technologies, products, or services
- Financial position
- Legal matters
- Accounting
- Strategy going forward
- Risks

8. Information about mechanisms related to board elections and structure is *least likely* to be found in:

   A. The company's by-laws and articles of organization.

   B. The corporate governance section of the company's annual report.

   C. Notice of the company's annual general meeting.

   Answer: B

   Information about mechanisms related to board elections and structure is found in:

   - The company's by-laws and articles of organization.
   - Notice of the company's annual general meeting.

9. Information about related-party transactions is *most likely* to be found in:

   A. The annual corporate governance report to shareholders.

   B. The company's articles of organization.

   C. The annual proxy statement.

   Answer: C

   Information about related-party transactions is usually found in:

   - The annual reports of companies, under the heading of "Related-party" transactions.
   - The annual proxy statement, under the heading of "Related-party" transactions.

- Prospectus of a company preceding a public offering of securities.

10. Which of the following statements regarding a company's code of ethics is *most accurate*?

    A. It provides guidance for addressing conflicts of interest that occur within the organization only.

    B. It sets standards for ethical conduct based solely on the principles of integrity.

    C. It prohibits any practice that would provide advantages to company insiders that are not also offered to shareholders.

    Answer: C

    A company's code of ethics is an essential document, as it sets standards for ethical conduct based on the principles of integrity, trust, and honesty.

    It provides guidance for addressing conflicts of interest within and outside the organization.

11. Good corporate governance practices *least likely* require the creation of a committee for:

    A. Overseeing the audit of the company's financial reports.

    B. Overseeing compliance with regulatory requirements.

    C. Setting executive remuneration/compensation.

    Answer: B

    Good corporate governance practices require the creation of the following committees:

    - Audit committee
    - Remuneration committee
    - Nominations committee

12. Consider the following statements:

    Statement 1: The remuneration committee should ensure that the rewards and incentives offered to management are consistent with the best long-term interests of shareholders.

Statement 2: U.S. companies must disclose whether they have at least two financial experts on their audit committees and their names.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

U.S. companies must disclose whether they have at least one financial expert on their audit committees and the name of at least one of the committee's financial experts.

13. The audit committee is *least likely* responsible for ensuring that:

A. The independent auditors' priorities are aligned with the best interests of the management.

B. The independent auditors have authority over the audit of the entire corporate group, including foreign subsidiaries and affiliated companies.

C. The information included in the financial statements is complete, accurate, reliable, relevant, verifiable, and timely.

Answer: A

The audit committee is responsible for ensuring that the independent auditors' priorities are aligned with the best interests of shareholders.

14. In order to assess whether the Nominations Committee has recruited board members who act in their best interests, shareholders should *least likely* review:

A. Whether the company has a succession plan for executive management in the event of unforeseen circumstances.

B. Whether the terms and conditions of options granted to management and employees are reasonable.

C. The composition, background, and areas of expertise of existing board members, and whether new nominees complement the board's current portfolio of talents.

Answer: B

The terms and conditions of options granted to management and employees are reviewed to assess whether the Remuneration Committee is working in the best interests of shareholders.

15. In order to protect shareholders' voting rights, a company should *most likely*:

    A. Coordinate the timing of its annual general meeting with other companies in its region to ensure that all of them hold their meetings on the same day but in different locations.

    B. Use a third-party entity to count shareholder votes.

    C. Require shareholders' presence at the annual general meeting for them to vote.

    Answer: B

    Coordinating the timing of the company's annual general meeting with other companies in the region to ensure that all of them hold their meetings on the same day but in different locations prevents shareholders from attending all meetings, and therefore from exercising their voting rights.

    Requiring shareholders' presence at the annual general meeting for them to vote limits their ability to cast votes.

16. Consider the following statements:

    Statement 1: Cumulative voting decreases the likelihood that shareholders' interests are represented on the board.

    Statement 2: Information concerning confidentiality of voting rights is found in the proxy statement.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

    Answer: B

    Cumulative voting enables shareholders to vote in a manner that enhances the likelihood that their interests are represented on the board.

Information concerning confidentiality of voting rights is found in the company's by-laws or articles of organization.

17. In order to protect shareholders' interests companies should *most likely*:

    A. Provide large quantities of stock options to management in order to align their interests with those of shareholders.

    B. Introduce anti-takeover mechanisms.

    C. Give shareholders the right to vote on certain aspects of executive compensation.

    Answer: C

    Providing large quantities of stock options to management might dilute the value of shares held by existing shareholders.

    Anti-takeover mechanisms deny shareholders full market value of their shares.

18. Consider the following statements:

    Statement 1: Good corporate governance practices require a company to have different classes of common shares that separate the voting rights of those shares from their economic value.

    Statement 2: When reviewing a company's anti-takeover measures, investors should consider whether change-in-control provisions will trigger large severance packages and other payments to company executives.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

    Answer: A

    A company with different classes of common shares in which the majority, or all, of the voting rights are given to one class of shareholders is more likely to have a management team and board that are focused on the interests of only those shareholders.

Portfolio Management

Reading 41: Portfolio Management: An Overview

1. Which of the following is *most likely*?

   A. The lower the diversification ratio, the greater the risk reduction benefits of diversification and the greater the portfolio effect.

   B. The higher the diversification ratio, the greater the risk reduction benefits of diversification and the greater the portfolio effect.

   C. The lower the diversification ratio, the lower the risk reduction benefits of diversification and the greater the portfolio effect.

2. Which of the following is *most likely* to have the lowest risk tolerance?

   A. Banks

   B. Foundations

   C. Defined-benefit pension plans

3. Determining the portfolio's asset allocation is part of the:

   A. Planning phase.

   B. Execution phase.

   C. Feedback phase.

4. Consider the following statements:

   Statement 1: Open-end funds need to keep cash to fund redemptions.

   Statement 2: Closed-end funds cannot accept new investments into the fund.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

5. Consider the following statements:

   Statement 1: ETFs are similar to open-end funds in that they usually trade close to their NAV per share.

   Statement 2: ETFs are similar to closed-end funds in that they trade in the secondary market.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

6. A balanced fund typically invests in:

   A. Debt securities only.

   B. Short-term debt securities only.

   C. Debt and equity securities.

7. Which of the following investment vehicles entail incentive-based fees for managers?

   A. Hedge funds

   B. Mutual funds

   C. Separately managed accounts

8. Which of the following investment vehicles *least likely* have minimum investment requirements?

   A. Separately managed accounts

   B. Mutual funds

   C. Hedge funds

9. Eventual exit strategy is an important consideration when investing in:

   A. Hedge funds.

   B. Exchange traded funds.

   C. Venture capital funds.

10. Which of the following individuals is *most likely* to be risk averse?

A. An old person with large net worth

B. A young person with moderate income expectations

C. An old person with a low income stream

Reading 41: Portfolio Management: An Overview

1. Which of the following is *most likely*?

   A. The lower the diversification ratio, the greater the risk reduction benefits of diversification and the greater the portfolio effect.

   B. The higher the diversification ratio, the greater the risk reduction benefits of diversification and the greater the portfolio effect.

   C. The lower the diversification ratio, the lower the risk reduction benefits of diversification and the greater the portfolio effect.

   Answer: A

   The diversification ratio is the ratio of the standard deviation of an equal-weighted portfolio to the standard deviation of a randomly selected component of the portfolio. The lower the diversification ratio, the greater the risk reduction benefits of diversification and the greater the portfolio effect.

2. Which of the following is *most likely* to have the lowest risk tolerance?

   A. Banks

   B. Foundations

   C. Defined-benefit pension plans

   Answer: A

   Banks typically have low risk tolerance, while foundations and defined-benefit pension plans have longer time horizons and a higher tolerance for risk.

3. Determining the portfolio's asset allocation is part of the:

   A. Planning phase.

   B. Execution phase.

   C. Feedback phase.

   Answer: B

Determining the portfolio's asset allocation is part of the execution phase of constructing a portfolio.

4. Consider the following statements:

   Statement 1: Open-end funds need to keep cash to fund redemptions.

   Statement 2: Closed-end funds cannot accept new investments into the fund.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: C

   Both statements are indeed correct.

5. Consider the following statements:

   Statement 1: ETFs are similar to open-end funds in that they usually trade close to their NAV per share.

   Statement 2: ETFs are similar to closed-end funds in that they trade in the secondary market.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: C

   Both statements are indeed correct.

6. A balanced fund typically invests in:

   A. Debt securities only.

   B. Short-term debt securities only.

   C. Debt and equity securities.

Answer: C

Balanced or hybrid funds invest in both bonds and equity securities.

7. Which of the following investment vehicles entail incentive-based fees for managers?

   A. Hedge funds

   B. Mutual funds

   C. Separately managed accounts

   Answer: A

   Management fees in hedge funds also have a performance-based component.

8. Which of the following investment vehicles *least likely* have minimum investment requirements?

   A. Separately managed accounts

   B. Mutual funds

   C. Hedge funds

   Answer: B

   Investors can participate in mutual funds with a relatively small initial investment. This is not the case with SMAs and hedge funds.

9. Eventual exit strategy is an important consideration when investing in:

   A. Hedge funds.

   B. Exchange traded funds.

   C. Venture capital funds.

   Answer: C

   The eventual exit strategy is an important consideration when investing in venture capital funds.

10. Which of the following individuals is *most likely* to be risk averse?

    A. An old person with large net worth

    B. A young person with moderate income expectations

C. An old person with a low income stream

Answer: C

Old people have a shorter investment time frame within which to make up any losses.

Further, low income streams cannot help cover any shortfalls. Therefore, they are not likely to take up risky investments.

Reading 42: Portfolio Risk and Return: Part I

1. A study shows that over the last 10 years, there has been a positive relationship between risk and return on equity securities. This finding *most likely* supports the conclusion that market prices are predominantly determined by investors who are:

   A. Risk neutral.

   B. Risk seeking.

   C. Risk averse.

2. Which of the following is *most likely*?

   A. The higher an investor's risk tolerance, the higher the level of risk acceptable to the investor and the lower her risk aversion.

   B. The lower an investor's risk tolerance, the lower the level of risk acceptable to the investor and the lower her risk aversion.

   C. The higher an investor's risk tolerance, the lower the level of risk acceptable to the investor and the higher her risk aversion.

3. The risk aversion coefficient is *most likely* highest for:

   A. A risk-averse investor.

   B. A risk-seeking investor.

   C. A risk-neutral investor.

4. Consider the following statements:

   Statement 1: The risk aversion coefficient for a risk-neutral investor equals one.

   Statement 2: Given a utility function, the risk-free asset offers the same level of utility to risk-averse, risk-seeking, and risk-neutral investors.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

C. Both statements are incorrect.

5. Consider the following statements:

   Statement 1: The lower the risk aversion coefficient, the lower the negative impact of risk on portfolio utility.

   Statement 2: The fact that indifference curves are upward sloping suggests that investors experience diminishing marginal utility of wealth.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

6. Which of the following is *most likely* regarding the slope of indifference curves for risk-neutral and risk-seeking investors respectively?

	Risk-Neutral Investors	Risk-Seeking Investors
A.	Zero	Negative
B.	One	Positive
C.	Negative	Zero

7. Consider the following statements:

   Statement 1: The risk aversion coefficient and the slope of an investor's indifference curves are negatively related.

   Statement 2: Given two indifference curves, the one that lies further to the southeast offers a lower level of utility.

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

Use the following information to answer Questions 8 to 11:

An analyst gathered the following information regarding three investments:

Investment	Expected Return	Standard Deviation
Investment A	11%	18%
Investment B	18%	24%
Investment C	14%	22%
Investment D	22%	29%

Utility formula:

$U = E(R) - (1/2 \times A\sigma^2)$

8. A risk-averse investor with a risk aversion coefficient of 4 will *most likely* choose:

   A. Investment A.

   B. Investment B.

   C. Investment D.

9. A risk-averse investor with a risk aversion coefficient of 6 will *most likely* choose:

   A. Investment A.

   B. Investment C.

   C. Investment D.

10. A risk-neutral investor will *most likely* choose:

    A. Investment B.

    B. Investment C.

    C. Investment D.

11. A risk-loving investor will *most likely* choose:

    A. Investment A.

    B. Investment B.

    C. Investment D.

12. The dependent and independent variable in the capital allocation line equation are *most likely*:

	Dependent Variable	Independent Variable
A.	Expected return	Total risk
B.	Total risk	Market risk premium
C.	Expected return	Market risk premium

13. If an indifference curve intersects the investor's capital allocation line at two different points, it is *most likely* that:

    A. The investor is not maximizing her total utility.

    B. The higher of the two points offers a higher level of utility.

    C. The portfolios are leveraged portfolios.

14. Consider the following statements:

    Statement 1: At a given level of risk, the indifference curve for a more risk-seeking investor would have a greater slope than that of a less risk-seeking investor.

    Statement 2: The optimal portfolio for a more risk-averse investor would lie above and to the right of the optimal portfolio for a less risk-averse investor.

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are incorrect.

15. A two-asset portfolio's standard deviation is minimized when the correlation between the two assets equals:

    A. +1

    B. Zero

    C. −1

16. Consider the following statements:

    Statement 1: At a given level of risk, the indifference curve for a more risk-seeking investor would have a greater slope than that of a less risk-seeking investor.

    Statement 2: The optimal portfolio for a more risk-averse investor would lie above and to the right of the optimal portfolio for a less risk-averse investor.

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

17. An investor's investment opportunity set *most likely* consists of:

A. Individual assets only.

B. Individual assets and portfolios.

C. Portfolios only.

18. The minimum variance frontier *most likely* consists of:

A. Individual assets only.

B. Portfolios only.

C. Individual assets and portfolios.

19. Consider the following statements:

Statement 1: The risk-return characteristics of portfolios that combine the risk-free asset with a risky asset or a portfolio of risky assets lie along a straight line.

Statement 2: All other things remaining the same, the greater the slope of the capital allocation line, the better the risk-return characteristics of portfolios that lie on it.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

20. The decision regarding which point along her CAL an investor selects as her portfolio is known as her:

A. Investing decision.

B. Operating decision.

C. Financing decision.

Use the following information to answer Questions 21 and 22:

Alicia invested 30% of her funds in Asset A (standard deviation = 12%). She then invested the rest of her funds in Asset B whose variance was estimated to be 0.02.

21. Compute her portfolio's standard deviation, if the correlation between the two assets equals 0.7.

    A. 8.05%

    B. 12.68%

    C. 7.06%

22. Compute her portfolio's standard deviation, if the covariance between the two assets equals 0.014.

    A. 13.03%

    B. 10.58%

    C. 8.59%

23. The indifference curve of a relatively aggressive investor will be:

    A. Upward sloping and relatively flat.

    B. Downward sloping and relatively steep.

    C. Upward sloping and relatively steep.

24. Consider the following statements:

    Statement 1: Risk-averse investors will only take on more risk if they are compensated for the additional risk in the form of higher expected return.

    Statement 2: Risk-averse investors prefer higher risk to lower risk for a given level of expected returns.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

25. Which of the following statements regarding the indifference curves is

least accurate?

A. Their slope decreases as more risk is taken.

B. A less risk-averse investor would have a flatter indifference curve.

C. They are upward sloping.

26. An investor will be indifferent between two investments with:

    A. Different expected returns, if the investment with the lower expected return entails a lower level of risk.

    B. The same expected returns, if the investments have different levels of risk.

    C. Different expected returns, if the investment with the higher expected return entails a lower level of risk.

27. Susan has a portfolio whose standard deviation is estimated to be 11.68%. She is thinking of adding another asset to her portfolio whose standard deviation of returns is the same as her existing portfolio, but has a correlation coefficient with the existing portfolio of 0.65. If she adds the new asset to her portfolio, the standard deviation of the new portfolio will be:

    A. Equal to 11.68%.

    B. Less than 11.68%.

    C. More than 11.68%.

28. Juan wants to invest in a portfolio consisting of two risky assets, A and B. He gathered the following information:

    Standard deviation of returns of asset A = 2.03%

    Standard deviation of returns of asset B = 3.55%

    Given that 35% of the funds are invested in asset A and the rest in asset B, the maximum risk of this portfolio as measured by its standard deviation is *closest to*:

    A. 1.597%

    B. 3.018%

    C. 2.414%

29. Consider the following statements:

Statement 1: Maximum diversification benefits occur when the correlation coefficient equals +1.

Statement 2: If the correlation coefficient between assets is negative, portfolio standard deviation is greater than when correlation coefficient equals zero.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

30. A conservative investor wants to diversify his current portfolio of investments by investing in a high-risk, high-return asset. However, he also wants to reduce his overall risk. Which of the following correlation of returns between those on his new investment and his original portfolio offers the *lowest* risk?

A. 0.354

B. −0.567

C. −0.242

31. An analyst gathered the following information regarding three portfolios. Which portfolio is *most likely* to plot below the Markowitz efficient frontier?

	Portfolio Expected Return	**Standard Deviation**
A	8%	13%
B	15%	16%
C	11%	20%

32. Consider the following statements:

Statement 1: As correlation falls, the curvature of the line between the two assets' risk-return profiles decreases.

Statement 2: The expected return of the portfolio decreases as the correlation coefficient of the two assets decreases.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

33. Which of the following statements is *least accurate*?

    A. An optimal portfolio for an investor occurs where the indifference curve is tangent to the efficient frontier.

    B. The efficient frontier represents a set of portfolios that have the maximum expected risk for every given level of expected return.

    C. The slope of the indifference curve represents the amount of extra return required by the investor to take on an additional unit of risk.

34. Which of the following statements is untrue regarding arithmetic and geometric return calculations?

    A. The arithmetic return is a simple average of all holding period returns.

    B. The geometric return basically represents a buy-and-hold strategy.

    C. The arithmetic return will always be lower than the geometric return.

35. Which of the following risk factors comprises the bulk of risk for a fully diversified portfolio?

    A. Variance

    B. Standard deviation

    C. Covariance

36. If Suzanne allocated to two different asset classes, each of which had a standard deviation of 20% and a correlation 0.9, what would her portfolio standard deviation be?

    A. 20%

    B. Higher than 20%

    C. Lower than 20%

Reading 42: Portfolio Risk and Return: Part I

1. A study shows that over the last 10 years, there has been a positive relationship between risk and return on equity securities. This finding *most likely* supports the conclusion that market prices are predominantly determined by investors who are:

   A. Risk neutral.

   B. Risk seeking.

   C. Risk averse.

   Answer: C

   Historically, there has been a positive relationship between risk and return, which suggests that market prices are primarily determined by investors who are predominantly risk averse.

2. Which of the following is *most likely*?

   A. The higher an investor's risk tolerance, the higher the level of risk acceptable to the investor and the lower her risk aversion.

   B. The lower an investor's risk tolerance, the lower the level of risk acceptable to the investor and the lower her risk aversion.

   C. The higher an investor's risk tolerance, the lower the level of risk acceptable to the investor and the higher her risk aversion.

   Answer: A

   The greater the level of risk an investor can tolerate, the higher the level of risk she would be willing to take in her portfolio and the lower her aversion to risk.

3. The risk aversion coefficient is *most likely* highest for:

   A. A risk-averse investor

   B. A risk-seeking investor

   C. A risk-neutral investor

   Answer: A

The risk aversion coefficient is higher for investors who are more risk averse, as additional risk reduces the total utility they derive from their portfolios.

4. Consider the following statements:

   Statement 1: The risk aversion coefficient for a risk-neutral investor equals one.

   Statement 2: Given a utility function, the risk-free asset offers the same level of utility to risk-averse, risk-seeking, and risk-neutral investors.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: B

   The risk aversion coefficient for a risk-neutral investor equals zero, as her level of utility is unrelated to the risk inherent in her portfolio.

   The risk-free asset has zero risk so it offers the same level of utility to all investors.

5. Consider the following statements:

   Statement 1: The lower the risk aversion coefficient, the lower the negative impact of risk on portfolio utility.

   Statement 2: The fact that indifference curves are upward sloping suggests that investors experience diminishing marginal utility of wealth.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: A

   Statement 1 is correct. A lower risk aversion coefficient means that the effect of risk on portfolio utility will be lower.

The fact that indifference curves are curved suggests that investors exhibit diminishing marginal utility of wealth. As more risk is added to the portfolio, the increase in return required increases at an increasing rate. The upward slope of indifference curve tells us that investors are risk averse—in order to be indifferent between two portfolios with different levels of risk, the high risk portfolio must offer a higher return as well.

6. Which of the following is *most likely* regarding the slope of indifference curves for risk-neutral and risk-seeking investors respectively?

	Risk-Neutral Investors	**Risk-Seeking Investors**
A.	Zero	Negative
B.	One	Positive
C.	Negative	Zero

Answer: A

Risk-neutral investors have perfectly horizontal indifference curves, while risk-seeking investors have downward-sloping or negatively sloped indifference curves.

7. Consider the following statements:

Statement 1: The risk aversion coefficient and the slope of an investor's indifference curves are negatively related.

Statement 2: Given two indifference curves, the one that lies further to the southeast offers a lower level of utility.

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

The risk aversion coefficient and the slope of the investor's indifference curve are positively related. For example, a risk-seeking investor has a negative risk aversion coefficient and a negatively sloped indifference curve.

The indifference curve furthest to the northwest offers the highest level of utility.

Use the following information to answer Questions 8 to 11:

An analyst gathered the following information regarding three investments:

Investment	Expected Return	Standard Deviation
Investment A	11%	18%
Investment B	18%	24%
Investment C	14%	22%
Investment D	22%	29%

Utility formula:

$U = E(R) - (1/2 \times A\,\sigma^2)$

8. A risk-averse investor with a risk aversion coefficient of 4 will *most likely* choose:

   A. Investment A.

   B. Investment B.

   C. Investment D.

   Answer: B

Investments	Expected Return	Standard Deviation	Utility at A = 4
Investment A	11%	18%	0.0452
Investment B	18%	24%	0.0648
Investment C	14%	22%	0.0432
Investment D	22%	29%	0.0518

   Therefore, an investor with a risk aversion coefficient of 4 will choose Investment B.

9. A risk-averse investor with a risk aversion coefficient of 6 will *most*

likely choose:

A. Investment A.

B. Investment C.

C. Investment D.

Answer: A

Investments	Expected Return	Standard Deviation	Utility at A = 6
Investment A	11%	18%	0.0128
Investment B	18%	24%	0.0072
Investment C	14%	22%	−0.0052
Investment D	22%	29%	−0.0323

Therefore, an investor with a risk aversion coefficient of 4 will choose Investment A.

10. A risk-neutral investor will *most likely* choose:

A. Investment B.

B. Investment C.

C. Investment D.

Answer: C

A risk-neutral investor's risk aversion coefficient is 0. She wants the highest return possible and therefore, will choose Investment D.

11. A risk-loving investor will *most likely* choose:

A. Investment A.

B. Investment B.

C. Investment D.

Answer: C

A risk-loving investor likes both higher risk and higher return. Therefore, she will choose Investment D.

12. The dependent and independent variable in the capital allocation line

equation are *most likely*:

	Dependent Variable	Independent Variable
A.	Expected return	Total risk
B.	Total risk	Market risk premium
C.	Expected return	Market risk premium

Answer: A

The CAL has expected return on the y-axis and portfolio risk on the x-axis.

13. If an indifference curve intersects the investor's capital allocation line at two different points it is *most likely* that:

    A. The investor is not maximizing her total utility.

    B. The higher of the two points offers a higher level of utility.

    C. The portfolios are leveraged portfolios.

    Answer: A

    An investor maximizes her utility when her indifference curve is tangent to the CAL. If the indifference curve intersects the CAL at two different points, an investor can optimize her utility by moving to an indifference curve that lies further north-west.

    All points on a given indifference curve offer the same level of utility.

    It is not necessary for the portfolios to be leveraged portfolios.

14. Consider the following statements:

    Statement 1: At a given level of risk, the indifference curve for a more risk-seeking investor would have a greater slope than that of a less risk-seeking investor.

    Statement 2: The optimal portfolio for a more risk-averse investor would lie above and to the right of the optimal portfolio for a less risk-averse investor.

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

A more risk-seeking (aggressive) investor's indifference curve would be **less steep** (have a lower slope) as he does not require as much of an additional return to take more risk.

The optimal portfolio for a more risk-averse (conservative) investor would lie **below and to the left of** the optimal portfolio for a less risk-averse (aggressive) investor.

15. A two-asset portfolio's standard deviation is minimized when the correlation between the two assets equals:

A. +1

B. Zero

C. −1

Answer: C

Portfolio standard deviation is minimized when the correlation between the two assets equals −1.

16. Consider the following statements:

Statement 1: At a given level of risk, the indifference curve for a more risk-seeking investor would have a greater slope than that of a less risk-seeking investor.

Statement 2: The optimal portfolio for a more risk-averse investor would lie above and to the right of the optimal portfolio for a less risk-averse investor.

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

At a given level of risk, the indifference curve for a more risk-seeking investor would be **flatter** than that of a less risk-seeking investor.

The optimal portfolio for a more risk-averse investor would lie above and to the **left** of the optimal portfolio for a less risk-averse investor.

17. An investor's investment opportunity set *most likely* consists of:

    A. Individual assets only.

    B. Individual assets and portfolios.

    C. Portfolios only.

    Answer: B

    The IOS consists of individual securities and portfolios that can be formed by combining those individual securities.

18. The minimum variance frontier *most likely* consists of:

    A. Individual assets only.

    B. Portfolios only.

    C. Individual assets and portfolios.

    Answer: B

    Assets with low correlations can be combined into portfolios that have a lower risk than any of the individual assets in the portfolio. The minimum variance frontier consists of portfolios that minimize the level of risk for each level of expected return.

19. Consider the following statements:

    Statement 1: The risk-return characteristics of portfolios that combine the risk-free asset with a risky asset or a portfolio of risky assets lie along a straight line.

    Statement 2: All other things remaining the same, the greater the slope of the capital allocation line, the better the risk-return characteristics of portfolios that lie on it.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are correct.

    Answer: C

The risk-return characteristics of portfolios that combine the risk-free asset with a risky asset or a portfolio of risky assets lie along a straight line as the correlation between the risk-free asset and any risky asset equals zero. All capital allocation lines have a constant gradient or slope.

Portfolios on capital allocation lines with a steeper positive slope dominate all portfolios that lie on CALs with a lower slope (that lie below it).

20. The decision regarding which point along her CAL an investor selects as her portfolio is known as her:

A. Investing decision.

B. Operating decision.

C. Financing decision.

Answer: C

Which portfolio along the CAL an investor chooses to invest in is her financing decision (how much she wants to invest at or borrow at the risk-free rate).

Use the following information to answer Questions 21 and 22:

Alicia invested 30% of her funds in Asset A (standard deviation = 12%). She then invested the rest of her funds in Asset B whose variance was estimated to be 0.02.

21. Compute her portfolio's standard deviation, if the correlation between the two assets equals 0.7.

A. 8.05%

B. 12.68%

C. 7.06%

Answer: B

$[(0.3^2 \times 0.12^2) + (0.7^2 \times 0.02) + 2\,(0.3)\,(0.7)\,(0.12)\,(0.1414)\,(0.7)]^{0.5}$
$= 12.68\%$

22. Compute her portfolio's standard deviation, if the covariance between the two assets equals 0.014.

A. 13.03%

B. 10.58%

C. 8.59%

Answer: A

$[(0.3^2 \times 0.12^2) + (0.7^2 \times 0.02) + 2\,(0.3)\,(0.7)\,(0.014)]^{0.5} = 13.03\%$

23. The indifference curve of a relatively aggressive investor will be:

A. Upward sloping and relatively flat.

B. Downward sloping and relatively steep.

C. Upward sloping and relatively steep.

Answer: A

A less risk-averse or aggressive investor would require lower additional return as compensation for bearing addition risk. Therefore, her indifference curve will be relatively flat.

24. Consider the following statements:

Statement 1: Risk-averse investors will only take on more risk if they are compensated for the additional risk in the form of higher expected return.

Statement 2: Risk-averse investors prefer higher risk to lower risk for a given level of expected returns.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: A

Only Statement 1 is correct.

Risk-averse investors prefer lower risk to higher risk for a given level of expected returns.

25. Which of the following statements regarding the indifference curves is *least accurate*?

A. Their slope decreases as more risk is taken.

B. A less risk-averse investor would have a flatter indifference curve.

C. They are upward sloping.

Answer: A

The slope of an indifference curve becomes steeper as more risk is taken.

26. An investor will be indifferent between two investments with:

A. Different expected returns, if the investment with the lower expected return entails a lower level of risk.

B. The same expected returns, if the investments have different levels of risk.

C. Different expected returns, if the investment with the higher expected return entails a lower level of risk.

Answer: A

An investor will be indifferent between two investments with different expected returns only if the investment with the lower expected return entails a lower level of risk.

27. Susan has a portfolio whose standard deviation is estimated to be 11.68%. She is thinking of adding another asset to her portfolio whose standard deviation of returns is the same as her existing portfolio, but has a correlation coefficient with the existing portfolio of 0.65. If she adds the new asset to her portfolio, the standard deviation of the new portfolio will be:

A. Equal to 11.68%.

B. Less than 11.68%.

C. More than 11.68%.

Answer: B

Whenever the correlation coefficient is less than +1, diversification benefits occur and reduce the overall standard deviation of the portfolio.

28. Juan wants to invest in a portfolio consisting of two risky assets, A and

B. He gathered the following information:

Standard deviation of returns of asset A = 2.03%

Standard deviation of returns of asset B = 3.55%

Given that 35% of the funds are invested in asset A and the rest in asset B, the maximum risk of this portfolio as measured by its standard deviation is *closest to*:

A. 1.597%

B. 3.018%

C. 2.414%

Answer: B

The maximum value for portfolio standard deviation will be obtained when the correlation coefficient equals +1.

Portfolio standard deviation:

$[(0.35^2 \times 0.0203^2) + (0.65^2 \times 0.0355^2) + (2 \times 0.35 \times 0.65 \times 0.0203 \times 0.0355 \times 1)]^{0.5}$

Portfolio standard deviation = 0.03018 or 3.018%

29. Consider the following statements:

Statement 1: Maximum diversification benefits occur when the correlation coefficient equals +1.

Statement 2: If the correlation coefficient between assets is negative, portfolio standard deviation is greater than when correlation coefficient equals zero.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: B

Maximum diversification benefits occur when the correlation coefficient equals −1. If the correlation coefficient between assets is negative, portfolio standard deviation is lower than when correlation coefficient equals zero.

30. A conservative investor wants to diversify his current portfolio of investments by investing in a high-risk, high-return asset. However, he also wants to reduce his overall risk. Which of the following correlation of returns between those on his new investment and his original portfolio offers the *lowest* risk?

A. 0.354

B. −0.567

C. −0.242

Answer: B

A conservative investor can experience a higher return and a lower risk by diversifying into a high-risk, higher-return asset if the correlation between the assets is fairly low. Among the given choices, choice "B" offers the lowest correlation of returns between those on his new investment and his original portfolio and hence, offers the lowest risk.

31. An analyst gathered the following information regarding three portfolios. Which portfolio is *most likely* to plot below the Markowitz efficient frontier?

	Portfolio Expected Return	**Standard Deviation**
A	8%	13%
B	15%	16%
C	11%	20%

Answer: C

Portfolio C lies below the Markowitz efficient frontier because Portfolio B offers a higher return at lower risk.

32. Consider the following statements:

Statement 1: As correlation falls, the curvature of the line between the two assets' risk-return profiles decreases.

Statement 2: The expected return of the portfolio decreases as the correlation coefficient of the two assets decreases.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: B

As correlation falls, the curvature of the line between the two assets' risk-return profiles increases. The expected return of the portfolio does not vary with the correlation coefficient of the two assets.

33. Which of the following statements is *least accurate*?

A. An optimal portfolio for an investor occurs where the indifference curve is tangent to the efficient frontier.

B. The efficient frontier represents a set of portfolios that have the maximum expected risk for every given level of expected return.

C. The slope of the indifference curve represents the amount of extra return required by the investor to take on an additional unit of risk.

Answer: B

The efficient frontier represents a set of portfolios that have the minimum expected risk for every given level of expected return. Alternatively, it represents the set of portfolios that have the maximum expected return for every given level of risk.

34. Which of the following statements is untrue regarding arithmetic and geometric return calculations?

A. The arithmetic return is a simple average of all holding period returns.

B. The geometric return basically represents a buy-and-hold strategy.

C. The arithmetic return will always be lower than the geometric return.

Answer: C

The arithmetic return will always be higher than the geometric return due to the compounding nature of the equation.

35. Which of the following risk factors comprises the bulk of risk for a fully diversified portfolio?

A. Variance

B. Standard deviation

C. Covariance

Answer: C

The covariance among the assets in the portfolio accounts for the bulk of risk.

36. If Suzanne allocated to two different asset classes, each of which had a standard deviation of 20% and a correlation 0.9, what would her portfolio standard deviation be?

A. 20%

B. Higher than 20%

C. Lower than 20%

Answer: C

Anytime a correlation between two assets is less than 1, diversification benefits are achieved. In this example, portfolio standard deviation would fall, but not by a large amount.

Reading 43: Portfolio Risk and Return: Part II

1. The greater the disparity between an investor's cost of borrowing and the risk-free rate:

   A. The greater the slope of the CML.

   B. The more significant the kink in the CML.

   C. The greater the expected return on the market portfolio.

2. A model that uses the relationship between security returns and earnings growth is most likely an example of a:

   A. Macroeconomic factor model.

   B. Statistical factor model.

   C. Fundamental factor model.

3. A regression of ABC Stock's historical monthly returns against the return on the S&P 500 gives an alpha of 0.003 and a beta of 0.95. Given that ABC Stock rises by 4% during a month in which the market rose 2.25%, calculate the abnormal return on ABC Stock.

   A. 1.75%

   B. 1.56%

   C. 2.44%

4. Beta is *least likely* defined as:

   A. The ratio of the covariance of the stock's return and the market return to the standard deviation of market returns.

   B. The correlation between the asset and the market times the ratio of the standard deviation of the asset to the standard deviation of the market.

   C. A measure of the sensitivity of the return on the asset to the market's return.

5. Can the CML be applied to price individual assets and inefficient portfolios?

	Individual Assets	Inefficient Portfolios
A.	Yes	Yes
B.	No	No
C.	Yes	No

6. The SML and CAPM can be used to price:
   A. Individual assets and efficient portfolios only, not inefficient portfolios.
   B. All assets and portfolios.
   C. Efficient and inefficient portfolios, but not individual assets.
7. Jennifer invests 30% of her funds in the risk-free asset, 45% in the market portfolio, and the rest in Beta Corp, a U.S. stock that has a beta of 0.9. Given that the risk-free rate and the expected return on the market are 7% and 16% respectively, the portfolio's expected return is *closest to*:
   A. 13.08%
   B. 16.00%
   C. 15.10%
8. Which of the following portfolio performance measures equals the slope of the capital allocation line?
   A. Sharpe ratio
   B. Jensen's alpha
   C. Treynor ratio
9. Which of the following is *most likely* based on systematic risk?
   A. Sharpe ratio
   B. Treynor ratio
   C. M^2
10. Which of the following **most likely** indicates the maximum fee an investor should pay a portfolio manager?
    A. Sharpe ratio

B. Jensen's alpha

C. Treynor ratio

Use the following information to answer Questions 11 to 15:

The following information is available regarding the portfolio performance of three investment managers:

Manager	Return	Standard Deviation	Beta
A	19%	27%	0.7
B	14%	22%	1.2
C	16%	19%	0.9
Market (M)	11%	24%	
Risk-free rate	5%		

11. Manager B's expected return is *closest to*:

    A. 9.20%

    B. 12.20%

    C. 10.40%

12. Manager A's Sharpe ratio is *closest to*:

    A. 0.5185

    B. 0.4091

    C. 0.2000

13. Manager C's Treynor ratio is *closest to*:

    A. 0.2000

    B. 0.1222

    C. 0.5789

14. Manager B's M^2 value is *closest to*:

    A. 3.82%

    B. 6.44%

    C. 1.80%

15. Manager C's Jensen's alpha is *closest to*:

   A. 7.89%

   B. 10.40%

   C. 5.60%

16. Which of the following is *most likely* regarding the security characteristic line?

   A. It plots a security's expected return against beta risk.

   B. It plots a security's excess return against total risk.

   C. It plots a security's excess return against excess returns on the market.

Use the following information to answer Questions 17 to 19:

An investor gathered the following information regarding three stocks, which are not in the market portfolio:

Stock	Expected return	Standard deviation	Beta
A	22%	25%	1.1
B	17%	30%	1.4
C	19%	23%	0.8

The return on the market portfolio is 15% with a standard deviation of 21%, and the risk-free rate of return is 4%.

17. Stock C's Jensen's alpha is *closest to*:

   A. 5.90%

   B. 6.20%

   C. 12.80%

18. Stock A's nonsystematic variance is *closest to*:

   A. 0.0036

   B. 0.0247

   C. 0.0091

19. Which stock should the investor *least likely* add to the market

portfolio?

A. Stock A

B. Stock B

C. Stock C

20. Which of the following is *least likely* a limitation of the CAPM?

A. It is a multi-period model.

B. It is a single-factor model.

C. A true market portfolio is inobservable.

21. Which of the following statements is *most accurate*?

A. The capital market line plots returns against market risk.

B. The security market line plots returns against total risk.

C. The capital market line plots returns against standard deviation.

22. A portfolio that lies to the left of the market portfolio on the CML is:

A. A borrowing portfolio.

B. A lending portfolio.

C. An efficient portfolio.

23. An analyst gathered the following information:

Risk-free rate: 5%

Market risk premium: 6%

Beta: 0.8

The required rate of return for the stock is *closest* to:

A. 6%

B. 5.8%

C. 9.8%

24. An analyst gathered the following information regarding two stocks:

	Stock A	**Stock B**
Beta	0.7	1.1

Current market price	$20	$35
Expected dividend	$1	$1
Expected price at year end	$23	$37

Assuming a risk-free rate of 5% and the expected market return of 12%, which of the following statements is *most accurate*?

A. Stock A is overpriced and therefore the analyst should sell it.

B. Stock B is underpriced and therefore the analyst should buy it.

C. Stock A is underpriced and therefore the analyst should buy it.

25. If the covariance of the market's returns with a stock's returns is 0.007, and the standard deviation of the market's returns is 0.07, the stock's beta is *closest* to:

    A. 0.1

    B. 1.43

    C. 0.7

26. Consider the following statements:

    Statement 1: All the portfolios on the capital market line are perfectly positively correlated.

    Statement 2: A risk-free asset has zero correlation with all other risky assets.

    Which of the following is *most likely*?

    A. Both statements are incorrect.

    B. Both statements are correct.

    C. Only one statement is correct.

27. Which of the following statements is *most accurate*?

    A. If the beta for an asset is greater than 1, it will lie above the security market line.

    B. Beta can be viewed as a standardized measure of unsystematic risk.

    C. Any security that plots below the security market line is considered overpriced.

28. Which of the following statements is *most accurate*?

   A. A security whose required rate of return is greater than the expected rate of return is considered overvalued and plots above the security market line.

   B. If the stock's alpha is positive, it is considered undervalued and plots above the security market line.

   C. A security whose estimated rate of return is greater than the required rate of return is considered overvalued and plots below the security market line.

29. Jessica is considering investing in two assets, A and B, with betas 2.1 and 1.6 respectively. Her broker tells her that the return on the market portfolio is 14% and that the risk-free rate is 6%. Given that the expected return on both the assets is 20%, she should *most likely* invest in:

   A. Asset B only.

   B. Asset A only.

   C. None of the assets.

30. Juan gathered the following information regarding the stocks of three companies, A, B, and C:

Stock	Current share price ($)	Expected price in one year ($)	Beta
A	24	29	1.6
B	32	39	1.3
C	28	33	1.2

   Given that the risk-free rate is 6% and that the current market risk premium is 10%, which of the above stocks will *least likely* plot below the security market line?

   A. Stock B

   B. Stock C

   C. Stock A

Reading 43: Portfolio Risk and Return: Part II

1. The greater the disparity between an investor's cost of borrowing and the risk-free rate:

   A. The greater the slope of the CML.

   B. The more significant the kink in the CML.

   C. The greater the expected return on the market portfolio.

   Answer: B

   The slope of the CML for lending portfolios (where a portion of the investor's funds are invested in the risk-free asset) is dictated by the difference between the risk-free rate and the market portfolio.

   The slope of the CML for leveraged or borrowing portfolios (where the weight of the market portfolio of the investor's portfolio is greater than 100%) is dictated by the difference between the cost of borrowing and the market portfolio.

   The greater the difference between the risk-free rate and the cost of borrowing, the greater the significance of the kink in the CML.

2. A model that uses the relationship between security returns and earnings growth is most likely an example of a:

   A. Macroeconomic factor model.

   B. Statistical factor model.

   C. Fundamental factor model.

   Answer: C

   Fundamental factor models use relationships between security returns and underlying fundamentals (e.g., earnings, earnings' growth, and cash flow growth) to estimate returns.

3. A regression of ABC Stock's historical monthly returns against the return on the S&P 500 gives an alpha of 0.003 and a beta of 0.95. Given that ABC Stock rises by 4% during a month in which the market rose 2.25%, calculate the abnormal return on ABC Stock.

A. 1.75%

B. 1.56%

C. 2.44%

Answer:

ABC Stock's expected return for the month = 0.003 + 0.95 × 0.0225 = 0.0244 or 2.44%

ABC's company-specific return (abnormal return) = 0.04 – 0.0244 = 0.0156 or 1.56%

4. Beta is *least likely* defined as:

   A. The ratio of the covariance of the stock's return and the market return to the standard deviation of market returns.

   B. The correlation between the asset and the market times the ratio of the standard deviation of the asset to the standard deviation of the market.

   C. A measure of the sensitivity of the return on the asset to the market's return.

   Answer: A

   Beta is the ratio of the covariance of the stock's return and the market return to the variance of market returns.

5. Can the CML be applied to price individual assets and inefficient portfolios?

	Individual Assets	**Inefficient Portfolios**
A.	Yes	Yes
B.	No	No
C.	Yes	No

   Answer: B

   The CAL and the CML only applied to efficient portfolios, not to individual assets or inefficient portfolios. They use total risk on the x-axis, and since only systematic risk is priced, they can only be used for efficient portfolios (those with no unsystematic risk and whose total risk therefore was the same as their systematic risk).

6. The SML and CAPM can be used to price:

   A. Individual assets and efficient portfolios only, not inefficient portfolios.

   B. All assets and portfolios.

   C. Efficient and inefficient portfolios, but not individual assets.

   Answer: B

   The SML and the CAPM can be applied to any security or portfolio, regardless of whether it is efficient. This is because they are based only on a security's systematic risk, not total risk.

7. Jennifer invests 30% of her funds in the risk-free asset, 45% in the market portfolio, and the rest in Beta Corp, a U.S. stock that has a beta of 0.9. Given that the risk-free rate and the expected return on the market are 7% and 16% respectively, the portfolio's expected return is *closest to*:

   A. 13.08%

   B. 16.00%

   C. 15.10%

   Answer: A

   Beta of the portfolio = $w_1 \beta_1 + w_2 \beta_2 + w_3 \beta_3$

   Beta of the portfolio = $(0.3 \times 0) + (0.45 \times 1) + (0.25 \times 0.9) = 0.675$

   Expected return of the portfolio = $R_f + \beta (R_m - R_f)$

   Expected return of the portfolio = $0.07 + 0.675 (0.16 - 0.07) = 0.1308$ or 13.08%

8. Which of the following portfolio performance measures equals the slope of the capital allocation line?

   A. Sharpe ratio

   B. Jensen's alpha

   C. Treynor ratio

Answer: A

The slope of the CAL equals the difference between the asset/portfolio's return and the risk-free rate divided by the standard deviation of the asset/portfolio.

9. Which of the following is *most likely* based on systematic risk?

   A. Sharpe ratio

   B. Treynor ratio

   C. M^2

   Answer: B

   The Sharpe ratio and M^2 are based on total risk. The Treynor ratio is based on beta risk only.

10. Which of the following most likely indicates the maximum fee an investor should pay a portfolio manager?

    A. Sharpe ratio

    B. Jensen's alpha

    C. Treynor ratio

    Answer: B

    Jensen's alpha equals the difference between the portfolio's actual return and the required return (as predicted by the CAPM) based on the asset's systematic risk. An investor should not pay the portfolio manager a fee greater than the portfolio's Jensen's alpha, as such a fee would take the portfolio's net return lower than the risk of a passively managed portfolio.

Use the following information to answer Questions 11 to 15:

The following information is available regarding the portfolio performance of three investment managers:

Manager	Return	Standard Deviation	Beta
A	19%	27%	0.7
B	14%	22%	1.2

C	16%	19%	0.9
Market (M)	11%	24%	
Risk-free rate	5%		

11. Manager B's expected return is *closest to*:

A. 9.20%

B. 12.20%

C. 10.40%

Answer: B

Expected return = $R_f + \beta\,(R_m - R_f)$

Expected return = 0.05 + 1.2 (0.11 – 0.05) = 12.20%

12. Manager A's Sharpe ratio is *closest to*:

A. 0.5185

B. 0.4091

C. 0.2000

Answer: A

Sharpe ratio = $(R_A - R_f) / \sigma_A$ = (0.19 – 0.05) / 0.27 = 0.5185

13. Manager C's Treynor ratio is *closest to*:

A. 0.2000

B. 0.1222

C. 0.5789

Answer: B

Treynor ratio = $(R_C - R_f) / \beta_C$ = (0.16 – 0.05) / 0.9 = 0.1222

14. Manager B's M^2 value is *closest to*:

A. 3.82%

B. 6.44%

C. 1.80%

Answer: A

$M^2 = (R_A - R_f)\ \sigma_m / \sigma_C - (R_m - R_f) = [(0.14 - 0.05) \times 0.24 / 0.22] - (0.11 - 0.05)$

$M^2 = 3.82\%$

15. Manager C's Jensen's alpha is *closest to*:

    A. 7.89%

    B. 10.40%

    C. 5.60%

    Answer: C

    Manager C's expected return = $R_f + \beta\ (R_m - R_f) = 0.05 + 0.9\ (0.11 - 0.05) = 10.4\%$

    Jensen's alpha = 16% – 10.4% = 5.6%

16. Which of the following is *most likely* regarding the security characteristic line?

    A. It plots a security's expected return against beta risk.

    B. It plots a security's excess return against total risk.

    C. It plots a security's excess return against excess returns on the market.

    Answer: C

    The security characteristic line (SCL) plots the excess returns of a security against the excess returns on the market.

Use the following information to answer Questions 17 to 19:

An investor gathered the following information regarding three stocks, which are not in the market portfolio:

Stock	Expected return	Standard deviation	Beta
A	22%	25%	1.1
B	17%	30%	1.4
C	19%	23%	0.8

The return on the market portfolio is 15% with a standard deviation of 21%, and the risk-free rate of return is 4%.

17. Stock C's Jensen's alpha is *closest to*:

    A. 5.90%

    B. 6.20%

    C. 12.80%

    Answer: B

    Stock C's expected return = $R_f + \beta (R_m - R_f)$ = 0.04 + 0.8 (0.15 – 0.04) = 12.8%

    Jensen's alpha = 19% – 12.8% = 6.2%

18. Stock A's nonsystematic variance is *closest to*:

    A. 0.0036

    B. 0.0247

    C. 0.0091

    Answer: C

    Nonsystematic variance = $(0.25^2) - (1.1^2 \times 0.21^2) = 0.009139$

19. Which stock should the investor *least likely* add to the market portfolio?

    A. Stock A

    B. Stock B

    C. Stock C

    Answer: B

    Stock A's expected return = 0.04 + 1.1 (0.15 – 0.04) = 16.1%

    Stock A's Jensen's alpha = 22% – 16.1% = 5.9%

    Stock B's expected return = 0.04 + 1.4 (0.15 – 0.04) = 19.4%

    Stock B's Jensen's alpha = 17% – 19.4% = −2.4%

    Stock B has a negative Jensen's alpha and therefore should not be included in the market portfolio.

20. Which of the following is *least likely* a limitation of the CAPM?

A. It is a multi-period model.

B. It is a single-factor model.

C. A true market portfolio is inobservable.

Answer: A

The CAPM is a single period model.

21. Which of the following statements is *most accurate*?

A. The capital market line plots returns against market risk.

B. The security market line plots returns against total risk.

C. The capital market line plots returns against standard deviation.

Answer: C

The capital market line plots returns against total risk as measured by the standard deviation of returns.

22. A portfolio that lies to the left of the market portfolio on the CML is:

A. A borrowing portfolio.

B. A lending portfolio.

C. An efficient portfolio.

Answer: B

A portfolio to the left of the market portfolio on the CML is less risky, as investors lend a proportion of their funds at the risk-free rate.

23. An analyst gathered the following information:

Risk-free rate: 5%

Market risk premium: 6%

Beta: 0.8

The required rate of return for the stock is *closest* to:

A. 6%

B. 5.8%

C. 9.8%

Answer: C

Required rate of return = 5% + 0.8 (6%) = 9.8%

24. An analyst gathered the following information regarding two stocks:

	Stock A	**Stock B**
Beta	0.7	1.1
Current market price	$20	$35
Expected dividend	$1	$1
Expected price at year end	$23	$37

Assuming a risk-free rate of 5% and the expected market return of 12%, which of the following statements is *most accurate*?

A. Stock A is overpriced and therefore the analyst should sell it.

B. Stock B is underpriced and therefore the analyst should buy it.

C. Stock A is underpriced and therefore the analyst should buy it.

Answer: C

Required return of Stock A = 5% + 0.7 (12% – 5%) = 9.9%

Expected return of Stock A = (23 – 20 + 1) / 20 = 20%

Since the expected return of Stock A is greater than its required return, it is underpriced and therefore the analyst should buy it.

Required return of Stock B = 5% + 1.1 (12% – 5%) = 12.7%

Expected return of Stock B = (37 – 35 + 1) / 35 = 8.57%

Since the expected return of Stock B is less than its required return, it is overpriced and therefore the analyst should sell it.

25. If the covariance of the market's returns with a stock's returns is 0.007, and the standard deviation of the market's returns is 0.07, the stock's beta is *closest* to:

A. 0.1

B. 1.43

C. 0.7

Answer: B

Variance of market's returns = $0.07^2 = 0.0049$

Beta = 0.007 / 0.0049 = 1.43

26. Consider the following statements:

    Statement 1: All the portfolios on the capital market line are perfectly positively correlated.

    Statement 2: A risk-free asset has zero correlation with all other risky assets.

    Which of the following is *most likely*?

    A. Both statements are incorrect.

    B. Both statements are correct.

    C. Only one statement is correct.

    Answer: B

    Both statements are correct.

27. Which of the following statements is *most accurate*?

    A. If the beta for an asset is greater than 1, it will lie above the security market line.

    B. Beta can be viewed as a standardized measure of unsystematic risk.

    C. Any security that plots below the security market line is considered overpriced.

    Answer: C

    Beta can be viewed as a standardized measure of systematic risk.

    All efficiently priced securities should lie on the security market line. Beta only determines where the security will lie on the security market line. If the beta for an asset is greater than 1, the asset has a higher normalized systematic risk than the market, which means that it is more volatile than the overall market portfolio and plots to the right of the market portfolio on the SML.

28. Which of the following statements is *most accurate*?

A. A security whose required rate of return is greater than the expected rate of return is considered overvalued and plots above the security market line.

B. If the stock's alpha is positive, it is considered undervalued and plots above the security market line.

C. A security whose estimated rate of return is greater than the required rate of return is considered overvalued and plots below the security market line.

Answer: B

A security whose required rate of return is greater than the expected rate of return is considered overvalued and plots below the security market line.

A security whose expected rate of return is greater than the required rate of return is considered undervalued and plots above the security market line.

29. Jessica is considering investing in two assets, A and B, with betas 2.1 and 1.6 respectively. Her broker tells her that the return on the market portfolio is 14% and that the risk-free rate is 6%. Given that the expected return on both the assets is 20%, she should *most likely* invest in:

A. Asset B only.

B. Asset A only.

C. None of the assets.

Answer: A

Required return on Asset A = $0.06 + [2.1 \times (0.14 - 0.06)] = 22.8\%$

The required return on Asset A (22.8%) is more than the expected return (20%). Therefore, Jessica should not invest in it.

Required return on Asset B = $0.06 + [1.6 \times (0.14 - 0.06)] = 18.8\%$

The required return on Asset B (18.8%) is less than the expected return (20%). Therefore, Jessica should invest in it.

30. Juan gathered the following information regarding the stocks of three companies, A, B, and C:

Stock	Current share price ($)	Expected price in one year ($)	Beta
A	24	29	1.6
B	32	39	1.3
C	28	33	1.2

Given that the risk-free rate is 6% and that the current market risk premium is 10%, which of the above stocks will *least likely* plot below the security market line?

A. Stock B

B. Stock C

C. Stock A

Answer: A

Expected return on stock A = (29 / 24) – 1 = 20.83%

Required return on stock A = 0.06 + (1.6 × 0.1) = 22%

The expected return (20.83%) is less than the required return (22%). Therefore, it is overvalued and will plot below the security market line.

Expected return on stock B = (39 / 32) – 1 = 21.88%

Required return on stock B = 0.06 + (1.3 × 0.1) = 19%

The expected return (21.88%) is more than the required return (19%). Therefore, it is undervalued and will plot above the security market line.

Expected return on stock C = (33 / 28) – 1 = 17.86%

Required return on stock C = 0.06 + (1.2 × 0.1) = 18%

The expected return (17.86%) is less than the required return (18%). Therefore, it is overvalued and will plot below the security market line.

Reading 44: Basics of Portfolio Planning and Construction

1. Which of the following statements regarding the portfolio management process is *least accurate*?

   A. A portfolio's performance should be evaluated relative to the highest return that can be achieved.

   B. The investment policy statement must be periodically reviewed and updated.

   C. The investor's needs and financial market expectations jointly determine her investment strategy.

2. An investment policy statement *least likely*:

   A. Creates a standard to judge the performance of the portfolio manager.

   B. Guarantees investment success.

   C. Helps the investor decide on realistic investment goals.

3. Javier is a relatively risk-averse investor. He tells his portfolio manager not to invest in securities with standard deviation of returns of more than 4%. This is *most likely* a(n):

   A. Relative risk objective.

   B. Absolute risk objective.

   C. Combination of relative and absolute risk objective.

4. Susan is a young marketing professional who recently inherited $2 million from her grandfather. With an annual income of $300,000 she already enjoys a good lifestyle and is thinking of investing her inheritance so that she can reap the benefits 30 years later when she retires. However, in light of the recent financial crisis, she is only looking to invest in government bonds and commodities such as gold.

   Which of the following statements is *most accurate*?

A. Susan has a high ability as well as willingness to take risk.

B. Susan has a low ability to take risk, but a high willingness to take risk.

C. Susan has a high ability to take risk, but a low willingness to take risk.

5. Consider the following statements:

   Statement 1: The portfolio should achieve returns within 5% of the returns on the S&P 500 index.

   Statement 2: The portfolio should outperform the benchmark index (the S&P 500 index) by one percentage point each year.

   Which of the following is *most accurate*?

	Statement 1 is a(n):	**Statement 2 is a(n):**
A	Relative return objective	Absolute return objective
B	Relative risk objective	Relative return objective
C	Absolute return objective	Relative return objective

6. Consider the following investors:

   Investor A wants to invest in securities that make regular payments so that he can pay his daughter's college tuition.

   Investor B does not want to invest in stocks of Alpha Corp. (his employer), as he has access to material nonpublic information about the company.

   Which of the following is *most accurate*?

	Investor A has:	**Investor B has:**
A	Liquidity constraints	Unique needs and circumstances
B	Time horizon constraints	Unique needs and circumstances
C	Liquidity constraints	Legal and regulatory constraints

7. The primary determinant of portfolio returns is how the portfolio manager allocates funds across:

   A. Securities within an asset class.

B. Different geographic regions.

C. Various asset classes.

8. Which of the following is *most accurate* regarding how portfolio managers develop risk and return expectations of various asset classes?

	Return expectations can be developed from:	Risk expectations can be developed from:
A	Economic analysis	Historical data
B	Historical data	Valuation models
C	Economic analysis	Valuation models

9. Which of the following is *least likely* a consideration when defining asset classes?

   A. Asset classes should cover all investment alternatives.

   B. The correlations among assets within a class should be relatively low.

   C. The correlations among different asset classes should be relatively low.

10. Consider the following statements:

    Statement 1: A change in the investor's objectives or constraints would cause a movement in the efficient frontier.

    Statement 2: A shift in the investor's indifference curve would require the strategic asset allocation to be adjusted.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

11. A portfolio manager expects commodities to outperform equities in the coming weeks and therefore allocates more funds to commodities. This is most likely referred to as:

    A. Strategic asset allocation.

B. Security selection.

C. Tactical asset allocation.

12. Under the core-satellite approach, investors invest most of their funds in:

A. Active investments.

B. Equity securities.

C. Passive investments.

Reading 44: Basics of Portfolio Planning and Construction

1. Which of the following statements regarding the portfolio management process is *least accurate*?

   A. A portfolio's performance should be evaluated relative to the highest return that can be achieved.

   B. The investment policy statement must be periodically reviewed and updated.

   C. The investor's needs and financial market expectations jointly determine her investment strategy.

   Answer: A

   A portfolio's performance should be evaluated and compared with the expectations and requirements listed in the policy statement.

2. An investment policy statement *least likely*:

   A. Creates a standard to judge the performance of the portfolio manager.

   B. Guarantees investment success.

   C. Helps the investor decide on realistic investment goals.

   Answer: B

   The investment policy statement does not guarantee investment success. It only provides discipline for the investment process and reduces the possibility of making hasty, inappropriate decisions.

3. Javier is a relatively risk-averse investor. He tells his portfolio manager not to invest in securities with standard deviation of returns of more than 4%. This is *most likely* a(n):

   A. Relative risk objective.

   B. Absolute risk objective.

   C. Combination of relative and absolute risk objective.

Answer: B

This is an absolute risk objective as the investor specifically states the level of risk he is willing to take.

4. Susan is a young marketing professional who recently inherited $2 million from her grandfather. With an annual income of $300,000 she already enjoys a good lifestyle and is thinking of investing her inheritance so that she can reap the benefits 30 years later when she retires. However, in light of the recent financial crisis, she is only looking to invest in government bonds and commodities such as gold.

   Which of the following statements is *most accurate*?

   A. Susan has a high ability as well as willingness to take risk.

   B. Susan has a low ability to take risk, but a high willingness to take risk.

   C. Susan has a high ability to take risk, but a low willingness to take risk.

   Answer: C

   With a high income and a long time horizon, Susan's ability to take risk is high. However, she is only willing to invest in government bonds and gold, investments that are considered to be relatively safe. Therefore, her willingness to take risk is low.

5. Consider the following statements:

   Statement 1: The portfolio should achieve returns within 5% of the returns on the S&P 500 index.

   Statement 2: The portfolio should outperform the benchmark index (the S&P 500 index) by one percentage point each year.

   Which of the following is *most accurate*?

	Statement 1 is a(n):	Statement 2 is a(n):
A	Relative return objective	Absolute return objective
B	Relative risk objective	Relative return objective
C	Absolute return objective	Relative return objective

Answer: B

Specifying a standard deviation of returns relative to that of a benchmark index is a relative risk objective.

Specifying portfolio return relative to a benchmark is a relative return objective.

6. Consider the following investors:

   Investor A wants to invest in securities that make regular payments so that he can pay his daughter's college tuition.

   Investor B does not want to invest in stocks of Alpha Corp. (his employer), as he has access to material nonpublic information about the company.

   Which of the following is *most accurate*?

	Investor A has:	**Investor B has:**
A	Liquidity constraints	Unique needs and circumstances
B	Time horizon constraints	Unique needs and circumstances
C	Liquidity constraints	Legal and regulatory constraints

   Answer: C

   Investor A's situation provides an example of a liquidity constraint.

   Investor B is legally prohibited from investing in securities regarding which he has material nonpublic information.

7. The primary determinant of portfolio returns is how the portfolio manager allocates funds across:

   A. Securities within an asset class.

   B. Different geographic regions.

   C. Various asset classes.

   Answer: C

   A portfolio's allocation across various asset classes is the primary determinant of portfolio returns.

8. Which of the following is *most accurate* regarding how portfolio

managers develop risk and return expectations of various asset classes?

	Return expectations can be developed from:	Risk expectations can be developed from:
A	Economic analysis	Historical data
B	Historical data	Valuation models
C	Economic analysis	Valuation models

Answer: A

Return expectations can be developed from historical data, economic analysis, or valuation models, while standard deviation and correlation estimates are primarily obtained from historical data.

9. Which of the following is *least likely* a consideration when defining asset classes?

   A. Asset classes should cover all investment alternatives.

   B. The correlations among assets within a class should be relatively low.

   C. The correlations among different asset classes should be relatively low.

   Answer: B

   When defining asset classes:

   - Each asset class should contain assets that carry a similar expected return and risk, and correlation among the assets within a class should be relatively high.
   - Each asset class should provide diversification benefits. The correlation of an asset class with other asset classes should be relatively low.
   - Asset classes should be mutually exclusive and should cover all investment alternatives.

10. Consider the following statements:

    Statement 1: A change in the investor's objectives or constraints would cause a movement in the efficient frontier.

Statement 2: A shift in the investor's indifference curve would require the strategic asset allocation to be adjusted.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

A change in the investor's objectives or constraints would result in a shift in her indifference curves.

A change in capital market expectations would cause a movement in the efficient frontier.

A change in either or both the efficient frontier and the investor's indifference curve would require the strategic asset allocation to be adjusted.

11. A portfolio manager expects commodities to outperform equities in the coming weeks and therefore allocates more funds to commodities. This is most likely referred to as:

A. Strategic asset allocation.

B. Security selection.

C. Tactical asset allocation.

Answer: C

Tactical asset allocation refers to an allocation where the manager deliberately deviates from the strategic asset allocation for the short term if she believes that another asset class will perform relatively better.

12. Under the core-satellite approach, investors invest most of their funds in:

A. Active investments.

B. Equity securities.

C. Passive investments.

Answer: C

Under the core-satellite approach, investors invest most of their funds in passive investments and trade a small proportion of assets actively.

Equity

Reading 45: Market Organization and Structure

1. Samantha needs to save money for her son's college tuition. She recently conducted an analysis on different securities in the market and found several of them to be undervalued. She therefore decided to invest in the undervalued securities from which she expects to earn superior return. Samantha is *most likely*:

   A. An information-motivated trader and not a pure investor.

   B. A pure investor and not an information-motivated trader.

   C. A pure investor as well as an information-motivated trader.

2. Which of the following is *least likely* a spot market transaction?

   A. A wheat producer hedging the risk of a decrease in the price of wheat by fixing the price for the next 3 months through a contract with a bread manufacturer.

   B. An American firm converting euros into U.S. dollars by trading in the foreign exchange market.

   C. A sugar manufacturer selling sugar in the open market.

3. Which of the following statements regarding information-motivated traders is *most accurate*?

   A. They trade for the short term.

   B. They differ from pure investors with respect to their motives for trading.

   C. They expect to obtain superior returns based on inside information.

4. Consider the following statements:

   Statement 1: Pure investors always have a long time horizon.

   Statement 2: Information-motivated traders take a higher level of risk than pure investors.

   Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

5. Consider the following statements:

   Statement 1: The equilibrium interest rate is the rate at which the aggregate demand for funds is greater than the aggregate supply of funds.

   Statement 2: Economies are said to be allocationally efficient when their financial systems allocate capital to the largest number of projects.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are incorrect.

6. An exchange traded fund *most likely* invests in:

   A. Real assets.

   B. Fixed-income instruments.

   C. Shares of other companies.

7. Which of the following is *least likely* a financial asset?

   A. Real estate investment trusts

   B. Gold

   C. Certificates of deposit

8. An investor who purchases a $1,000 par bond that has 3 years remaining till maturity from another investor is *least likely* trading in the:

   A. Money market.

   B. Secondary market.

   C. Traditional investment market.

9. Juan's friends recently started a project to construct a mega shopping

mall and are in need of funds. If Juan provides funds for a share in the project, he will *most likely* be trading in the:

A. Commodities market.

B. Traditional investment market.

C. Alternative investment market.

10. Which of the following is *least likely* a fixed income security?

A. Warrants

B. Repurchase agreements

C. Bonds

11. Consider the following statements:

Statement 1: A fixed income security with a maturity of 8 years is classified as a bond.

Statement 2: Commercial paper usually matures within a year.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

12. Closed-end funds *least likely*:

A. Offer to redeem existing shares on a daily basis.

B. Issue shares in primary market offerings.

C. Issue shares that may trade at a discount or a premium to the net asset value.

13. Mr. Williams enters into a contract to purchase 200 kg of sugar in 2 months' time. This contract would *most likely* be classified as a:

A. Financial contract.

B. Spot contract.

C. Physical contract.

14. Which of the following is *least likely* a characteristic of futures

contracts?

A. They have no counterparty risk.

B. They are relatively illiquid compared to forward contracts.

C. They are standardized contracts.

15. After analyzing the stock of Beta Inc., Megan concludes that the stock is undervalued and its price would soon increase. Based on her conclusions, she should *least likely*:

A. Purchase put options for the company's stock.

B. Purchase call options for the company's stock.

C. Write put options on the company's stock.

16. After analyzing the stock of Gamma Corp., Jessica concludes that the stock is overvalued at its current price of $55 and expects it to come down. She therefore purchases a put option for $6. The put option expires in 6 months and has an exercise price of $45. Which of the following statements is *most accurate*?

A. Jessica should exercise her option if Gamma Corp.'s share price falls to $42.

B. Jessica should exercise her option if Gamma Corp.'s share price falls to $51.

C. Jessica should only exercise her option if Gamma Corp.'s share price falls below $39.

17. Consider the following statements:

Statement 1: The cash flows in an interest rate swap are uncertain when the parties enter the contract.

Statement 2: Cash payments in an equity swap depend on the returns on the underlying stock or stock index.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

18. Alpha Manufacturers is a U.S.-based company that mainly imports its raw materials from Australia. The company needs to make a payment of AUD 1 million in 2 months. The company's finance director expects the Australian dollar to appreciate in value relative to the U.S. dollar and wants to lock in the exchange rate today. He should *most likely*:

A. Buy put options on the Australian dollar.

B. Go long on a forward contract on the AUD.

C. Write call options on the Australian dollar.

19. Which of the following is *least likely* a reason why real assets are attractive to investors?

A. They provide diversification benefits.

B. Market for real assets is quite liquid.

C. They provide income and tax benefits.

20. Consider the following statements:

Statement 1: Block brokers usually make their orders public to execute them quickly.

Statement 2: Many alternative trading systems are known as dark pools because they do not display orders.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

21. Which of the following statements regarding dealers is *least accurate*?

A. They seek the best price for their customers' orders.

B. They fill their clients' orders by trading with them.

C. They connect buyers and sellers who arrive in the market at different points in time.

22. Carter purchases a share on the Nasdaq and immediately sells it on the FTSE at a significant profit. Carter is *most likely* acting as a(n):

A. Dealer.

B. Broker-dealer.

C. Arbitrageur.

23. Clearinghouses *least likely*:

A. Act as escrow agents.

B. Arrange for final settlement of trades for members and non-members.

C. Guarantee contract performance in the futures markets.

24. Consider the following statements:

Statement 1: Owning an asset means that the person has a long position.

Statement 2: Selling an asset that a person owns means that she has a short position.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

25. Adam conducts research on the stock of Beta Corp. and feels that the stock price is unlikely to move in the near future. He therefore writes call options on the company's stock to earn the option premium. A few days later his friend tells him that Beta Corp.'s share price is expected to go down. Hearing this, Adam purchases put options on the company's stock. Adam's exposure to the risk of the stock of Beta Corp. is *most likely*:

A. Long.

B. Short.

C. Neutral.

26. Which of the following statements regarding short positions is *most accurate*?

A. Any dividends received on the stock must go to the short seller.

B. Lenders must rebate any interest from investing the collateral to the short sellers.

C. Securities lenders lend their securities because the short rebate rates are higher than the interest rates they receive from investing the collateral.

27. Which of the following statements regarding the leverage ratio is *least accurate*?

A. The maximum leverage ratio equals one divided by the minimum margin requirement.

B. The leverage ratio indicates how much more risky a leverage position is relative to an unleveraged position.

C. The leverage ratio is the ratio of the value of the equity investment to the value of the total position.

28. An investor borrowed $1,280 to purchase 100 shares of Alpha Ltd. at $32 per share. The investor's leverage ratio is *closest to*:

A. 1.67

B. 2.50

C. 0.40

29. Given a leverage ratio of 2.0, the minimum margin requirement is *closest to*:

A. 40%

B. 50%

C. 60%

Use the following information to answer Questions 30 to 34:

Adam purchases 1,200 shares of Beta Inc. at $22 per share and sells them after one year, during which time the stock also pays a dividend. The following information is also available:

Sale price = $25

Leverage ratio = 2.5

Call money rate = 5%

Dividend = $0.2 per share

Commission = $0.03 per share

Maintenance margin = 20%

Assume that the interest on the loan and the dividend are both paid at the end of the year.

30. Adam's initial investment is *closest to*:

    A. $10,560

    B. $26,400

    C. $10,596

31. The amount of interest paid by Adam is *closest to*:

    A. $1,320

    B. $264

    C. $792

32. Adam's return on this investment is *closest to*:

    A. 29.52%

    B. 18.52%

    C. 28.09%

33. Adam's gain attributable to leverage is *closest to*:

    A. 6.00%

    B. 34.09%

    C. 20.00%

34. The price at which Adam will receive a margin call is *closest to*:

    A. $16.50

    B. $26.67

    C. $10.00

35. An analyst gathered the following quotes for a security from different dealers in an equity market:

	Bid Price ($)	Ask Price ($)
Dealer 1	26.05	26.65
Dealer 2	25.95	26.70
Dealer 3	26.50	27.15

The market bid-ask spread is *closest to*:

A. $1.20

B. $0.67

C. $0.15

36. Consider the following statements:

    Statement 1: Limit orders specify the minimum price at which to buy a security.

    Statement 2: Market orders are always executed immediately at the best price available.

    Which of the following is *most likely*?

    A. Only one statement is incorrect.

    B. Both statements are correct.

    C. Both statements are incorrect.

37. A limit buy order placed above the best bid but below the best offer is *most likely*:

    A. Referred to as a standing limit order.

    B. Said to have created a new market.

    C. Referred to as a marketable limit order.

38. Sell limit orders are *least* aggressively priced if the limit price is:

    A. Above the best offer.

    B. Below the best bid.

    C. Above the best bid but below the best offer.

39. Global Investments wants to sell 30,000 shares of Gamma Corp at the best available market price. It only wants its order exposed to the

broker and exchange that receives it and specifies a display size of 3,000 shares for its order. This order is *most likely* a(n):

A. Limit sell order.

B. Iceberg order.

C. All-or-nothing order.

40. Good-on-close orders are *most likely* orders that:

A. Can be executed until cancelled by the broker.

B. Can only be executed at the close of trading.

C. Are good only upon receipt by the broker or exchange and are cancelled immediately if not filled.

41. Which of the following statements is *most accurate*?

A. A stop-sell order is placed by a bullish investor above the current market price.

B. A stop-buy order is placed by a bearish investor above the current market price.

C. A stop-sell order is placed by a bearish investor below the current market price.

42. Consider the following statements:

Statement 1: When a security is sold to the public for the first time, it is called an initial public offering.

Statement 2: A secondary offering is made in the secondary market.

Which of the following is *most likely*?

A. Only one statement is incorrect.

B. Both statements are correct.

C. Both statements are incorrect.

43. Which of the following statements regarding an underwritten offering is *least accurate*?

In an underwritten offering:

A. There is a conflict of interest for investment banks regarding pricing.

B. The investment bank only acts as a broker.

C. The investment bank guarantees the sale of the issue.

44. Consider the following statements:

Statement 1: Securities may be sold to a limited number of private investors over time via a shelf registration.

Statement 2: Dividend reinvestment plans allow shareholders to reinvest their dividends in shares of the company.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

45. Which of the following statements is *least accurate* regarding call and continuous markets?

A. In a call market, buyers can easily find sellers and vice-versa.

B. In a call market, transactions can take place whenever the market is open.

C. In a continuous market, prices are set either through an auction process or by dealer bid-ask quotes.

46. A dealer market is *least likely* a(n):

A. Price-driven market

B. Order-driven market

C. Quote-driven market

47. Which of the following *most likely* uses a derivative pricing rule?

A. Continuous markets

B. Crossing networks

C. Call markets

48. Order matching rules rank buy and sell orders based on all of the following *except*:

A. Time precedence.

B. Size precedence.

C. Display precedence.

49. Unique items *most likely* trade in a(n):

A. Dealer market.

B. Order-driven market.

C. Brokered market.

50. Consider the following statements:

Statement 1: Post-trade transparent markets do not publish data about trade prices until trades have occurred.

Statement 2: Pre-trade transparent markets publish real time data about quotes, but hide data about orders.

Which of the following is *most accurate*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

51. Dealers *most likely* prefer to trade in:

A. Pre-trade transparent markets

B. Post-trade transparent markets

C. Opaque markets

52. A well-functioning securities market *least likely* has:

A. Informational efficiency.

B. Liquidity.

C. Accurately priced securities.

53. Which of the following statements regarding the features of a well-functioning securities market is *least accurate*?

A. Markets must be significantly deep to achieve price continuity.

B. Market prices must reflect all the internal information about companies.

C. Transactions costs should be low.

54. Which of the following is *least likely* an objective of regulating the financial system?

A. Promote fairness by creating a level playing field for all participants.

B. Prevent arbitrageurs from trading on market price inefficiencies.

C. Control fraud or deception of uninformed market participants.

Reading 45: Market Organization and Structure

1. Samantha needs to save money for her son's college tuition. She recently conducted an analysis on different securities in the market and found several of them to be undervalued. She therefore decided to invest in the undervalued securities from which she expects to earn superior return. Samantha is *most likely*:

   A. An information-motivated trader and not a pure investor.

   B. A pure investor and not an information-motivated trader.

   C. A pure investor as well as an information-motivated trader.

   Answer: C

   Pure investors trade for saving, borrowing, or hedging purposes, whereas information-motivated traders conduct trades to profit from superior information about future values. The two categories of traders are not mutually exclusive. Pure investors may also be information-motivated traders.

   Samantha wants to save money just like an investor. However, she also expects to earn above average returns based on the information she believes to be superior and is therefore an information-motivated trader.

2. Which of the following is *least likely* a spot market transaction?

   A. A wheat producer hedging the risk of a decrease in the price of wheat by fixing the price for the next 3 months through a contract with a bread manufacturer.

   B. An American firm converting euros into U.S. dollars by trading in the foreign exchange market.

   C. A sugar manufacturer selling sugar in the open market.

   Answer: A

   Fixing the price of wheat for the next 3 months with another party is a forward contract. The other two are spot market transactions.

3. Which of the following statements regarding information-motivated traders is *most accurate*?

   A. They trade for the short term.

   B. They differ from pure investors with respect to their motives for trading.

   C. They expect to obtain superior returns based on inside information.

   Answer: B

   Information-motivated traders expect to earn above-average returns on their investments based on information they believe to be superior. They often invest in securities they believe are incorrectly priced and hope that the prices will change quickly in their favour. These price changes may occur almost instantaneously or they may take years to occur.

4. Consider the following statements:

   Statement 1: Pure investors always have a long-time horizon.

   Statement 2: Information-motivated traders take a higher level of risk than pure investors.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

   Answer: B

   Pure investors may also have a short-time horizon.

   Information-motivated traders do not necessarily take a higher level of risk. They expect to earn a return on their information in addition to the normal return expected for bearing risk through time.

5. Consider the following statements:

   Statement 1: The equilibrium interest rate is the rate at which the aggregate demand for funds is greater than the aggregate supply of funds.

Statement 2: Economies are said to be allocationally efficient when their financial systems allocate capital to the largest number of projects.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are incorrect.

Answer: C

The equilibrium interest rate is the rate at which the aggregate demand for funds is equal to the aggregate supply of funds.

Economies are said to be allocationally efficient when their financial systems allocate capital to those uses that are most productive.

6. An exchange traded fund *most likely* invests in:

   A. Real assets.

   B. Fixed-income instruments.

   C. Shares of other companies.

   Answer: C

   An exchange traded fund is a pooled investment vehicle which exclusively owns shares in other companies.

7. Which of the following is *least likely* a financial asset?

   A. Real estate investment trusts

   B. Gold

   C. Certificates of deposit

   Answer: B

   Gold is a commodity and is therefore, a physical asset. The other two are classified as financial assets.

8. An investor who purchases a $1,000 par bond that has 3 years remaining till maturity from another investor is *least likely* trading in

the:

A. Money market.

B. Secondary market.

C. Traditional investment market.

Answer: A

Money markets trade debt instruments maturing in 1 year or less.

Secondary markets are those in which funds flow between traders.

Traditional investment markets include all publicly traded debt, equities, and shares in pooled investment vehicles that hold these securities.

9. Juan's friends recently started a project to construct a mega shopping mall and are in need of funds. If Juan provides funds for a share in the project, he will *most likely* be trading in the:

A. Commodities market.

B. Traditional investment market.

C. Alternative investment market.

Answer: C

Alternative investment markets include hedge funds, private equities (including venture capital), commodities, real estate securities and properties, and securitized debt.

10. Which of the following is *least likely* a fixed income security?

A. Warrants

B. Repurchase agreements

C. Bonds

Answer: A

Warrants give their holders the right to purchase an entity's common stock and are therefore classified as equity securities, not as fixed income securities.

11. Consider the following statements:

Statement 1: A fixed income security with a maturity of 8 years is classified as a bond.

Statement 2: Commercial paper usually matures within a year.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

Fixed income securities with maturities of 10 years or less are classified as **notes**.

12. Closed-end funds *least likely*:

A. Offer to redeem existing shares on a daily basis.

B. Issue shares in primary market offerings.

C. Issue shares that may trade at a discount or a premium to the net asset value.

Answer: A

Once issued, investors in closed-end funds cannot sell their shares of the fund back to the fund by demanding redemption.

13. Mr. Williams enters into a contract to purchase 200 kg of sugar in 2 months' time. This contract would *most likely* be classified as a:

A. Financial contract.

B. Spot contract.

C. Physical contract.

Answer: C

Physical contracts are those in which the underlying asset is a physical asset.

Financial contracts are those in which the underlying asset is a financial asset.

Spot contracts require immediate delivery.

14. Which of the following is *least likely* a characteristic of futures contracts?

    A. They have no counterparty risk.

    B. They are relatively illiquid compared to forward contracts.

    C. They are standardized contracts.

    Answer: B

    Futures contracts are more liquid than forward contracts.

15. After analyzing the stock of Beta Inc., Megan concludes that the stock is undervalued and its price would soon increase. Based on her conclusions, she should *least likely*:

    A. Purchase put options for the company's stock.

    B. Purchase call options for the company's stock.

    C. Write put options on the company's stock.

    Answer: A

    Megan expects the price of Beta Inc.'s stock to increase and therefore should either purchase call options for the company's stock or write put options on the company's stock. Purchasing call options would give her the right to purchase the company's stock when its price increases. On the other hand, writing put options on the company's stock would give the other party the right to sell the company's stock. The option would not be exercised if the price rises, and Megan would be able to keep the option premium.

16. After analyzing the stock of Gamma Corp., Jessica concludes that the stock is overvalued at its current price of $55 and expects it to come down. She therefore purchases a put option for $6. The put option expires in 6 months and has an exercise price of $45. Which of the following statements is *most accurate*?

    A. Jessica should exercise her option if Gamma Corp.'s share price falls to $42.

    B. Jessica should exercise her option if Gamma Corp.'s share price falls to $51.

C. Jessica should only exercise her option if Gamma Corp.'s share price falls below $39.

Answer: A

Jessica should exercise her option if Gamma Corp's share price falls to $42. This way she will gain $3 (45 – 42) by exercising her option, but have a net loss of $3 because she paid option premium of $6. Exercising the option is beneficial as her net loss would be $6 if she doesn't exercise.

17. Consider the following statements:

Statement 1: The cash flows in an interest rate swap are uncertain when the parties enter the contract.

Statement 2: Cash payments in an equity swap depend on the returns on the underlying stock or stock index.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

18. Alpha Manufacturers is a U.S.-based company that mainly imports its raw materials from Australia. The company needs to make a payment of AUD 1 million in 2 months. The company's finance director expects the Australian dollar to appreciate in value relative to the U.S. dollar and wants to lock in the exchange rate today. He should *most likely*:

A. Buy put options on the Australian dollar.

B. Go long on a forward contract on the AUD.

C. Write call options on the Australian dollar.

Answer: B

The company needs to make a payment of AUD million in 2 months and will therefore need to buy Australian dollars.

Buying put options will give the company the right to sell Australian dollars.

Writing call options will obligate the company to sell Australian dollars in case it appreciates (which is expected).

19. Which of the following is *least likely* a reason why real assets are attractive to investors?

    A. They provide diversification benefits.

    B. Market for real assets is quite liquid.

    C. They provide income and tax benefits.

    Answer: B

    One of the drawbacks of investing in real assets is that they tend to trade in very illiquid markets.

20. Consider the following statements:

    Statement 1: Block brokers usually make their orders public to execute them quickly.

    Statement 2: Many alternative trading systems are known as dark pools because they do not display orders.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

    Answer: A

    Large trades, if known to the public before being executed, may have a significant impact on market price. Therefore, block brokers carefully manage the exposure of the orders entrusted to them.

21. Which of the following statements regarding dealers is *least accurate*?

    A. They seek the best price for their customers' orders.

    B. They fill their clients' orders by trading with them.

    C. They connect buyers and sellers who arrive in the market at different points in time.

Answer: A

Dealers profit when their average purchase price is less than their average selling price. Therefore, they tend to sell to their customers at high prices and buy from them at low prices.

Brokers on the other hand, seek the best price for their customers' orders.

22. Carter purchases a share on the Nasdaq and immediately sells it on the FTSE at a significant profit. Carter is *most likely* acting as a(n):

A. Dealer.

B. Broker-dealer.

C. Arbitrageur.

Answer: C

Dealers and arbitrageurs trade with their customers. However, dealers connect buyers and sellers who arrive in the market at different points in time, whereas arbitrageurs connect buyers and sellers who arrive in different markets at the same time.

23. Clearinghouses *least likely*:

A. Act as escrow agents.

B. Arrange for final settlement of trades for members and non-members.

C. Guarantee contract performance in the futures markets.

Answer: B

Clearinghouses only settle trades for their members. Brokers and dealers who are not members of the clearinghouse must arrange to have a clearinghouse member settle their trades.

24. Consider the following statements:

Statement 1: Owning an asset means that the person has a long position.

Statement 2: Selling an asset that a person owns means that she has a short position.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

A person with a short position has sold an asset that she does not own.

25. Adam conducts research on the stock of Beta Corp. and feels that the stock price is unlikely to move in the near future. He therefore writes call options on the company's stock to earn the option premium. A few days later his friend tells him that Beta Corp.'s share price is expected to go down. Hearing this, Adam purchases put options on the company's stock. Adam's exposure to the risk of the stock of Beta Corp. is *most likely*:

A. Long.

B. Short.

C. Neutral.

Answer: B

The exposure as a result of both short calls and long puts is short.

26. Which of the following statements regarding short positions is *most accurate*?

A. Any dividends received on the stock must go to the short seller.

B. Lenders must rebate any interest from investing the collateral to the short sellers.

C. Securities lenders lend their securities because the short rebate rates are higher than the interest rates they receive from investing the collateral.

Answer: B

Any dividends received on the stock must go to the lender.

Securities lenders lend their securities because the short rebate rates are lower than the interest rates they receive from investing the collateral.

27. Which of the following statements regarding the leverage ratio is *least accurate*?

    A. The maximum leverage ratio equals one divided by the minimum margin requirement.

    B. The leverage ratio indicates how much more risky a leverage position is relative to an unleveraged position.

    C. The leverage ratio is the ratio of the value of the equity investment to the value of the total position.

    Answer: C

    The leverage ratio is the ratio of the value of the position to the value of the equity investment in it.

28. An investor borrowed $1,280 to purchase 100 shares of Alpha Ltd. at $32 per share. The investor's leverage ratio is *closest to*:

    A. 1.67

    B. 2.50

    C. 0.40

    Answer: A

    Leverage ratio = Value of the position / Value of the equity investment

    Leverage ratio = $(100 \times 32) / (3{,}200 - 1{,}280) = 1.67$

29. Given a leverage ratio of 2.0, the minimum margin requirement is *closest to*:

    A. 40%

    B. 50%

    C. 60%

    Answer: B

    Minimum margin requirement = 1 / Leverage ratio

    Minimum margin requirement = $1 / 2.0 = 0.5 = 50\%$

Use the following information to answer Questions 30 to 34:

Adam purchases 1,200 shares of Beta Inc. at $22 per share and sells them after one year, during which time the stock also pays a dividend. The following information is also available:

Sale price = $25

Leverage ratio = 2.5

Call money rate = 5%

Dividend = $0.2 per share

Commission = $0.03 per share

Maintenance margin = 20%

Assume that the interest on the loan and the dividend are both paid at the end of the year.

30. Adam's initial investment is *closest to*:

    A. $10,560

    B. $26,400

    C. $10,596

    Answer: C

    Minimum margin requirement = 1 / 2.5 = 40%

    Total purchase price = 1,200 × 22 = $26,400

    Equity investment = 26,400 × 40% = $10,560

    Actual initial investment = Equity investment + Commission paid

    Actual initial investment = 10,560 + (1,200 × 0.03) = $10,596

31. The amount of interest paid by Adam is *closest to*:

    A. $1,320

    B. $264

    C. $792

    Answer: C

Interest paid = (26,400 – 10,560) × 5% = $792

32. Adam's return on this investment is *closest to*:

A. 29.52%

B. 18.52%

C. 28.09%

Answer: C

Proceeds on sale	$30,000
(1,200 × 25)	
Payoff loan	−15,840
(26,400 – 10,560)	
Margin interest paid	−792
Dividends received	240
(1,200 × 0.2)	
Sales commission paid	−36
(1,200 × 0.03)	
Remaining equity	**$13,572**

Therefore, return on investment = (13,572 / 10,596) – 1 = 28.09%

33. Adam's gain attributable to leverage is *closest to*:

A. 6.00%

B. 34.09%

C. 20.00%

Answer: B

Stock price return = (25 / 22) – 1 = 13.64%

Gain attributable to leverage = 13.64% × 2.5 = 34.09%

Note that the realized return is lower than the return due to leverage because of loan interest and commission paid.

34. The price at which Adam will receive a margin call is *closest to*:

A. $16.50

B. $26.67

C. $10.00

Answer: A

$$\text{Trigger Price} = \frac{\text{Initial purchase price} \times (1 - \text{Initial margin})}{1 - \text{Maintenance margin}}$$

$$\text{Trigger Price} = \frac{22 \times (1 - 0.4)}{(1 - 0.2)} = \$16.5$$

35. An analyst gathered the following quotes for a security from different dealers in an equity market:

	Bid Price ($)	**Ask Price ($)**
Dealer 1	26.05	26.65
Dealer 2	25.95	26.70
Dealer 3	26.50	27.15

The market bid-ask spread is *closest to*:

A. $1.20

B. $0.67

C. $0.15

Answer: C

Best bid price = $26.50

Best ask price = $26.65

Therefore, market bid-ask spread = 26.65 – 26.50 = $0.15

36. Consider the following statements:

Statement 1: Limit orders specify the minimum price at which to buy a security.

Statement 2: Market orders are always executed immediately at the best price available.

Which of the following is *most likely*?

A. Only one statement is incorrect.

B. Both statements are correct.

C. Both statements are incorrect.

Answer: C

Limit orders instruct the broker or the exchange to fill an order at a specified price or better. These specified prices (maximum price for a limit buy order and minimum price for a limit sell order) are referred to as limit prices.

Market orders instruct the broker or the exchange to fill an order immediately at the best available price. Market orders will only execute immediately if there are traders willing to take the other side of the trade.

37. A limit buy order placed above the best bid but below the best offer is *most likely*:

A. Referred to as a standing limit order.

B. Said to have created a new market.

C. Referred to as a marketable limit order.

Answer: B

A limit buy order placed above the best bid but below the best offer is said to have created a new market by establishing the new best bid.

38. Sell limit orders are *least* aggressively priced if the limit price is:

A. Above the best offer.

B. Below the best bid.

C. Above the best bid but below the best offer.

Answer: A

A sell limit order placed above the best offer is behind the market and is referred to as a standing limit order.

39. Global Investments wants to sell 30,000 shares of Gamma Corp at the best available market price. It only wants its order exposed to the

broker and exchange that receives it and specifies a display size of 3,000 shares for its order. This order is *most likely* a(n):

A. Limit sell order.

B. Iceberg order.

C. All-or-nothing order.

Answer: B

Hidden orders are exposed only to the broker or exchanges that receive them. However, they may not execute at all as other traders do not know about them. Therefore, traders sometimes indicate a specific display size with their orders to signal to other traders that someone is willing to trade at the displayed price. As most of the order size is hidden, these orders are also referred to as iceberg orders.

All-or-nothing orders can only trade if their entire sizes can be traded.

40. Good-on-close orders are *most likely* orders that:

A. Can be executed until cancelled by the broker.

B. Can only be executed at the close of trading.

C. Are good only upon receipt by the broker or exchange and are cancelled immediately if not filled.

Answer: B

Good-on-close orders can only execute at the close of trading and are also called market-on-close orders.

Good-till-cancelled orders are valid until cancelled by the broker.

Immediate-or-cancel orders may only be filled, completely or in part, immediately and are otherwise cancelled.

41. Which of the following statements is *most accurate*?

A. A stop-sell order is placed by a bullish investor above the current market price.

B. A stop-buy order is placed by a bearish investor above the current market price.

C. A stop-sell order is placed by a bearish investor below the current market price.

Answer: B

A stop-buy order is placed by short sellers above the market price to limit their losses if the market moves up contrary to their expectations.

A stop-sell order is placed by a bullish investor below the current market price to limit her losses if the market moves down contrary to her expectations.

42. Consider the following statements:

Statement 1: When a security is sold to the public for the first time, it is called an initial public offering.

Statement 2: A secondary offering is made in the secondary market.

Which of the following is *most likely*?

A. Only one statement is incorrect.

B. Both statements are correct.

C. Both statements are incorrect.

Answer: A

Only Statement 1 is correct.

When additional units of a previously issued security are sold, it is referred to as a seasoned offering (or a secondary offering). Both initial public offerings and secondary offerings are made in the primary market.

43. Which of the following statements regarding an underwritten offering is *least accurate*?

In an underwritten offering:

A. There is a conflict of interest for investment banks regarding pricing.

B. The investment bank only acts as a broker.

C. The investment bank guarantees the sale of the issue.

Answer: B

The investment bank only acts as a broker in a **best efforts offering**.

44. Consider the following statements:

    Statement 1: Securities may be sold to a limited number of private investors over time via a shelf registration.

    Statement 2: Dividend reinvestment plans allow shareholders to reinvest their dividends in shares of the company.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

    Answer: A

    Only Statement 2 is correct.

    In a shelf registration, companies sell seasoned issues to the public over time, not to private investors.

45. Which of the following statements is *least accurate* regarding call and continuous markets?

    A. In a call market, buyers can easily find sellers and vice-versa.

    B. In a call market, transactions can take place whenever the market is open.

    C. In a continuous market, prices are set either through an auction process or by dealer bid-ask quotes.

    Answer: B

    In a call market, all bid and ask prices for an asset are gathered to determine one price where the quantity offered for sale is close to the quantity demanded. All transactions take place at this single price.

    The other two statements are correct.

46. A dealer market is *least likely* a(n)?

    A. Price-driven market.

    B. Order-driven market.

C. Quote-driven market.

Answer: B

A dealer market is also known as a quote-driven or price-driven market.

47. Which of the following *most likely* uses a derivative pricing rule?

A. Continuous markets

B. Crossing networks

C. Call markets

Answer: B

Crossing networks use derivative pricing rules.

Continuous markets use discriminatory pricing rules.

Call markets use uniform pricing rules.

48. Order matching rules rank buy and sell orders based on all of the following *except*:

A. Time precedence.

B. Size precedence.

C. Display precedence.

Answer: B

Order matching rules rank buy and sell orders based on:

- Price precedence.
- Display precedence.
- Time precedence.

49. Unique items *most likely* trade in a(n):

A. Dealer market.

B. Order-driven market.

C. Brokered market.

Answer: C

In a brokered market, brokers arrange trades among their clients. Brokers organize markets for unique items (e.g., real estate properties and fine art masterpieces) that only interest a limited number of people.

50. Consider the following statements:

Statement 1: Post-trade transparent markets do not publish data about trade prices until trades have occurred.

Statement 2: Pre-trade transparent markets publish real time data about quotes, but hide data about orders.

Which of the following is *most accurate*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

Pre-trade transparent markets publish real time data about quotes and orders.

Post-trade transparent markets publish data about trade prices soon after trades occur.

51.

Dealers *most likely* prefer to trade in:

A. Pre-trade transparent markets.

B. Post-trade transparent markets.

C. Opaque markets.

Answer: C

Dealers prefer to trade in opaque markets because as frequent traders, they already have an information advantage over other traders.

52. A well-functioning securities market *least likely* has:

A. Informational efficiency.

B. Liquidity.

C. Accurately priced securities.

Answer: C

This is not one of the features of a well-functioning securities market.

53. Which of the following statements regarding the features of a well-functioning securities market is *least accurate*?

A. Markets must be significantly deep to achieve price continuity.

B. Market prices must reflect all the internal information about companies.

C. Transactions costs should be low.

Answer: B

In a well-functioning securities market, prices should reflect all externally available information for an asset. Prices should also rapidly adjust to reflect any new information.

54. Which of the following is *least likely* an objective of regulating the financial system?

A. Promote fairness by creating a level playing field for all participants.

B. Prevent arbitrageurs from trading on market price inefficiencies.

C. Control fraud or deception of uninformed market participants.

Answer: B

Regulation of the financial system has the following objectives:

- Control fraud or deception of uninformed market participants
- Control agency problems by setting minimum standards of competence for agents and by defining and enforcing minimum standards of practice
- Promote fairness by creating a level playing field for market participants
- Set mutually beneficial standards for financial reporting
- Prevent undercapitalized financial firms from exploiting their investors by making excessively risky investments, and

- Ensure that long-term liabilities are funded

Reading 46: Security Market Indices

1. As time passes, the total return index will *most likely* be:

   A. Greater in value than the price return index by a decreasing amount.

   B. Lower in value than the price return index by an increasing amount.

   C. Greater in value than the price return index by an increasing amount.

Use the following information to answer Questions 2 to 7:

An analyst gathered the following information regarding an equity market index which was created on January 1, 2009 and consists of the following four securities:

Securities	Price at December 31, 2009 ($)	Price at December 31, 2010 ($)	Dividend Paid ($)	Weight in the Index
A	31	35	2	25%
B	42	48	1	35%
C	27	32	1	20%
D	22	24	3	20%

Assume that dividends are paid at the end of the year.

The following information is also available:

Price return in 2009 = 10.25%

Total return in 2009 = 15.75%

2. The price return on Security A in 2010 is *closest to*:

   A. 19.35%

   B. 16.13%

   C. 12.90%

3. The total return on Security C in 2010 is *closest to*:

   A. 18.52%

   B. 29.63%

   C. 22.22%

4. The price return on the index in 2010 is *closest to*:

   A. 13.75%

   B. 19.66%

   C. 17.75%

5. The total return on the index in 2010 is *closest to*:

   A. 15.25%

   B. 17.75%

   C. 19.66%

6. Given that the index value at inception was 1,000, the values of the price return index at the end of 2009 and 2010 are *closest to*:

	2009 ($)	**2010 ($)**
A	1,137.50	1,293.91
B	1,102.50	1,254.09
C	1,102.50	1,137.50

7. Given that the index value at inception was 1,000, the values of the total return index at the end of 2009 and 2010 are *closest to*:

	2009 ($)	**2010 ($)**
A	1,157.50	1,385.06
B	1,196.60	1,431.85
C	1,157.50	1,431.85

8. The first decision that an index provider must make when conducting an index is *most likely*:

   A. Security selection.

B. Allocation of weight to each security.

C. Identification of the target market.

9. Which of the following statements regarding the construction of an index is *least accurate*?

   A. It must consist of all the securities in the target market.

   B. The target market may be based on asset class or the exchange on which the securities are traded.

   C. The number of securities in the index may be fixed or variable.

Use the following information relating to a price-weighted equity index to answer Questions 10 to 14:

Security	Shares in Index	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	2	46	53	0.2
B	2	55	51	0.4
C	2	36	42	0.1

Assume that all dividend payments are made at the end of the year.

10. The weight of Security B in the index on December 31, 2010 is *closest to*:

    A. 33.58%

    B. 40.15%

    C. 34.93%

11. The weight of Security C in the index on December 31, 2009 is *closest to*:

    A. 28.77%

    B. 26.28%

    C. 36.30%

12. Given that the index divisor is set to 3, the value of the index on December 31, 2010 is *closest to*:

A. 292

B. 97.33

C. 48.67

13. The price return on the index is *closest to*:

    A. 7.08%

    B. 6.57%

    C. 7.80%

14. The total return on the index is *closest to*:

    A. 8.07%

    B. 7.60%

    C. 7.08%

Use the following information regarding equal-weighted equity index to answer Questions 15 to 19:

Security	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	20	25	0.5
B	50	45	0.2
C	31.25	36	0.4
D	100	135	0.5

Assume that all dividend payments are made at the end of the year.

Note: The dollar value of the index on December 31, 2009 is $10,000 and using a divisor of 10, the index level equals 1,000.

15. The number of shares of Security C in the index on December 31, 2009 is *closest to*:

    A. 80

    B. 50

    C. 125

16. The weight of Security B in the index on December 31, 2010 is *closest*

to:

A. 18.55%

B. 25.00%

C. 19.35%

17. The value of the index on December 31, 2010 is *closest to*:

A. 11,630

B. 10,000

C. 1,163

18. The price return on the index is *closest to*:

A. 16.30%

B. 17.47%

C. 17.90%

19. The total return on the index is *closest to*:

A. 17.47%

B. 18.57%

C. 17.90%

Use the following information relating to a market-capitalization-weighted equity index to answer Questions 20 to 24:

Security	Shares Outstanding	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	4,000	30	36	0.85
B	12,000	25	21	2.15
C	7,000	40	47	1.12

Assume that all dividend payments are made at the end of the year.

20. The weight of Security A in the index on December 31, 2010 is *closest to*:

A. 19.86%

B. 17.14%

C. 18.27%

21. The weight of Security C in the index on December 31, 2009 is *closest to*:

    A. 45.38%

    B. 40.00%

    C. 42.86%

22. Given a divisor of 700, the value of the price return index on December 31, 2010 is *closest to*:

    A. 1,000

    B. 1,125.21

    C. 1,035.71

23. The price return on Security B is *closest to*:

    A. 3.57%

    B. −16%

    C. 20%

24. The total return on the index is *closest to*:

    A. 8.86%

    B. 3.57%

    C. 7.50%

Use the following information relating to a float-adjusted-market-capitalization-weighted equity index to answer Questions 25 to 30:

Security	Shares Outstanding	% of Shares in the Market Float	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)

A	20,000	41%	42	38	0.85
B	15,000	37%	54	51	2.15
C	20,000	53%	27	35	1.12

Assume that all dividend payments are made at the end of the year.

25. The number of shares of Security C in the index on December 31, 2010 is *closest to*:

    A. 10,600

    B. 20,000

    C. 8,200

26. The float-adjusted market capitalization of Security A on December 31, 2009 is *closest to*:

    A. $311,600

    B. $344,400

    C. $286,200

27. The weight of Security B in the index on December 31, 2010 is *closest to*:

    A. 29.31%

    B. 32.22%

    C. 37.02%

28. Given that the index value on December 31, 2009 was 1,000, the value of the price return index at 31 December 2010 is *closest to*:

    A. 1,038

    B. 965.65

    C. 1,124.17

29. The price return on the index is *closest to*:

    A. 3.80%

    B. 5.11%

    C. 4.28%

30. The total return on the index is *closest to*:

    A. 5.11%

    B. 6.22%

    C. 7.11%

31. Consider the following statements:

    Statement 1: The price return of a market-capitalization-weighted-equity index will be lower than that of an equal-weighted equity index if large-cap stocks underperform.

    Statement 2: The divisor in a price-weighted equity index typically equals the number of shares of each constituent security in the index.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

32. A market-capitalization-weighted equity index *most likely*:

    A. Results in arbitrary weights for each security.

    B. Leads to a lower ratio of book value to market value as compared to a fundamental-weighted index.

    C. Assigns a lower weight to a security whose price is relatively low.

33. A fundamental-weighted index based on the earnings yield *most likely*:

    A. Follows a momentum trading strategy.

    B. Assigns a higher weight to securities whose prices have risen.

    C. Assigns a higher weight to securities with a higher earnings yield.

34. Which of the following indices *least likely* requires rebalancing?

    A. Market-capitalization-weighted indices

    B. Price-weighted indices

    C. Equal-weighted indices

35. Consider the following statements:

Statement 1: Rebalancing creates turnover within an index.

Statement 2: In equal-weighted indices, the weights of securities that offer the lowest returns are increased during rebalancing.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

36. Which of the following statements regarding equity indices is *least accurate*?

    A. The aggregation of a sector index family is typically equivalent to a broad market index.

    B. A broad equity market index represents an entire market.

    C. Sector indices are designed to represent multiple security markets.

37. Which of the following is *least likely* an example of a style index?

    An index based on:

    A. Market capitalization.

    B. Economic development groups.

    C. Growth stocks.

38. Which of the following is *least likely* a challenge in the construction of a fixed-income index?

    A. Fixed-income securities are relatively illiquid.

    B. The universe of bonds is relatively constant.

    C. The number of fixed-income securities is quite large.

39. Which of the following statements regarding commodity indices is *least accurate*?

    A. Different commodity indices may have very different risk and return profiles.

    B. Commodity indices do not have an obvious weighting method.

    C. Commodity indices consist of physical commodities.

40. Commodity index returns *least likely* reflect:

A. Roll yield.

B. Risk-free interest rate.

C. Changes in actual prices.

41. Real estate investment trust indices can *most likely* be categorized as:

A. Multi-market indices.

B. Appraisal indices.

C. Price-weighted indices.

42. Which of the following is *least likely* a characteristic of hedge fund indices?

A. The index providers determine which hedge funds to include in the index.

B. There is an upward bias in hedge fund performance as represented by these indices.

C. They rely on voluntary disclosures from funds.

Reading 46: Security Market Indices

1. As time passes, the total return index will *most likely* be:
   A. Greater in value than the price return index by a decreasing amount.
   B. Lower in value than the price return index by an increasing amount.
   C. Greater in value than the price return index by an increasing amount.

   Answer: C

   The values of both versions of an index are the same at inception. However, as time passes, the total return index will be greater in value than the price return index by an increasing amount.

Use the following information to answer Questions 2 to 7:

An analyst gathered the following information regarding an equity market index which was created on January 1, 2009 and consists of the following 4 securities:

Securities	Price at December 31, 2009 ($)	Price at December 31, 2010 ($)	Dividend Paid ($)	Weight in the Index
A	31	35	2	25%
B	42	48	1	35%
C	27	32	1	20%
D	22	24	3	20%

Assume that dividends are paid at the end of the year.

The following information is also available:

Price return in 2009 = 10.25%

Total return in 2009 = 15.75%

2. The price return on Security A in 2010 is *closest to*:
   A. 19.35%
   B. 16.13%
   C. 12.90%

Answer: C

Price return on Security A = (35 / 31) – 1 = 12.90%

3. The total return on Security C in 2010 is *closest to*:

   A. 18.52%

   B. 29.63%

   C. 22.22%

   Answer: C

   Total return on Security C = (32 – 27 + 1) / 27 = 22.22%

4. The price return on the index in 2010 is *closest to*:

   A. 13.75%

   B. 19.66%

   C. 17.75%

   Answer: A

   Price return on the index equals the weighted average price return of the constituent securities.

   Price return on Security A = 12.90%

   Price return on Security B = (48 / 42) – 1 = 14.29%

   Price return on Security C = (32 / 27) – 1 = 18.52%

   Price return on Security D = (24 / 22) – 1 = 9.09%

   Therefore, price return on the index is calculated as:

   $= (0.1290 \times 0.25) + (0.1429 \times 0.35) + (0.1852 \times 0.2) + (0.0909 \times 0.2) = 13.75\%$

5. The total return on the index in 2010 is *closest to*:

   A. 15.25%

   B. 17.75%

   C. 19.66%

   Answer: C

   Total return on the index equals the weighted average total return of the constituent securities.

Total return on Security A = (35 – 31 + 2) / 31 = 19.35%

Total return on Security B = (48 – 42 + 1) / 42 = 16.67%

Total return on Security C = 22.22%

Total return on Security D = (24 – 22 + 3) / 22 = 22.73%

Therefore, total return on the index is calculated as follows:

= (0.1935 × 0.25) + (0.1667 × 0.35) + (0.2222 × 0.2) + (0.2273 × 0.2) = 19.66%

6. Given that the index value at inception was 1,000, the values of the price return index at the end of 2009 and 2010 are *closest to*:

	2009 ($)	2010 ($)
A	1,137.50	1,293.91
B	1,102.50	1,254.09
C	1,102.50	1,137.50

Answer: B

Value at the end of 2009 = 1,000 × 1.1025 = 1,102.50

Value at the end of 2010 = 1,000 × 1.1025 × 1.1375 = 1,254.09

7. Given that the index value at inception was 1,000, the values of the total return index at the end of 2009 and 2010 are *closest to*:

	2009	2010
A	1,157.50	1,385.06
B	1,196.60	1,431.85
C	1,157.50	1,431.85

Answer: A

Value at the end of 2009 = 1,000 × 1.1575 = 1,157.50

Value at the end of 2010 = 1,000 × 1.1575 × 1.1966 = 1,385.06

8. The first decision that an index provider must make when conducting an index is *most likely*:

A. Security selection.

B. Allocation of weight to each security.

C. Identification of the target market.

Answer: C

When constructing a security market index, the first decision that must be made relates to which market, market segment, or asset class the index should represent.

9. Which of the following statements regarding the construction of an index is *least accurate*?

A. It must consist of all the securities in the target market.

B. The target market may be based on asset class or the exchange on which the securities are traded.

C. The number of securities in the index may be fixed or variable.

Answer: A

An index may consist of all the securities in the target market or just a representative sample of the target market.

Use the following information relating to a price-weighted equity index to answer Questions 10 to 14:

Security	Shares in Index	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	2	46	53	0.2
B	2	55	51	0.4
C	2	36	42	0.1

Assume that all dividend payments are made at the end of the year.

10. The weight of Security B in the index on December 31, 2010 is *closest to*:

A. 33.58%

B. 40.15%

C. 34.93%

Answer: C

Weight of Security B = 51 / (53 + 51 + 42) = 34.93%

11. The weight of Security C in the index on December 31, 2009 is *closest to*:

A. 28.77%

B. 26.28%

C. 36.30%

Answer: B

Weight of Security C = 36 / (46 + 55 + 36) = 26.28%

12. Given that the index divisor is set to 3, the value of the index on December 31, 2010 is *closest to*:

A. 292

B. 97.33

C. 48.67

Answer: B

Value of the index = [(53 × 2) + (51 × 2) + (42 × 2)] / 3 = 97.33

13. The price return on the index is *closest to*:

A. 7.08%

B. 6.57%

C. 7.80%

Answer: B

Price return on the index = [(53 + 51 + 42) / (46 + 55 + 36)] – 1 = 6.57%

14. The total return on the index is *closest to*:

A. 8.07%

B. 7.60%

C. 7.08%

Answer: C

$$\text{Total return on the index} = \frac{(53 + 51 + 42) + (0.2 + 0.4 + 0.1) - (46 + 55 + 36)}{(46 + 55 + 36)}$$

$$\text{Total return on the index} = 7.08\%$$

Use the following information regarding equal-weighted equity

index to answer Questions 15 to 19:

Security	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	20	25	0.5
B	50	45	0.2
C	31.25	36	0.4
D	100	135	0.5

Assume that all dividend payments are made at the end of the year.

Note: The dollar value of the index on December 31, 2009 is $10,000 and using a divisor of 10, the index level equals 1,000.

15. The number of shares of Security C in the index on December 31, 2009 is *closest to*:

    A. 80

    B. 50

    C. 125

    Answer: A

    Value assigned to Security C = 10,000 / 4 = $2,500

    Number of shares of Security C = 2,500 / 31.25 = 80

16. The weight of Security B in the index on December 31, 2010 is *closest to*:

    A. 18.55%

    B. 25.00%

    C. 19.35%

    Answer: C

    Dollar value of the index on December 31, 2010:

    = (25 × 125) + (45 × 50) + (36 × 80) + (135 × 25) = $11,630

    Dollar value of Security B = 45 × 50 = $2,250

    Therefore, weight of Security B = 2,250 / 11,630 = 19.35%

17. The value of the index on December 31, 2010 is *closest to*:

A. 11,630

B. 10,000

C. 1,163

Answer: C

Value of the index on December 31, 2010 = 11,630 / 10 = 1,163

18. The price return on the index is *closest to*:

A. 16.30%

B. 17.47%

C. 17.90%

Answer: A

Price return on the index = ($11,630 / $10,000) – 1 = 16.30%

19. The total return on the index is *closest to*:

A. 17.47%

B. 18.57%

C. 17.90%

Answer: A

Total dividends = (0.5 × 125) + (0.2 × 50) + (0.4 × 80) + (0.5 × 25) = $117

Total return on the index = ($11,630 + $117 – $10,000) / $10,000 = 17.47%

Use the following information relating to a market-capitalization-weighted equity index to answer Questions 20 to 24:

Security	Shares Outstanding	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	4,000	30	36	0.85
B	12,000	25	21	2.15
C	7,000	40	47	1.12

Assume that all dividend payments are made at the end of the year.

20. The weight of Security A in the index on December 31, 2010 is *closest to*:

A. 19.86%

B. 17.14%

C. 18.27%

Answer: A

Total market capitalization of the index on December 31, 2010:

= (36 × 4,000) + (21 × 12,000) + (47 × 7,000) = $725,000

Market capitalization of Security A = (36 × 4,000) = $144,000

Therefore, weight of Security A = 144,000 / 725,000 = 19.86%

21. The weight of Security C in the index on December 31, 2009 is *closest to*:

A. 45.38%

B. 40.00%

C. 42.86%

Answer: B

Total market capitalization of the index on December 31, 2009:

= (30 × 4,000) + (25 × 12,000) + (40 × 7,000) = $700,000

Market capitalization of Security C = (40 × 7,000) = $280,000

Therefore, weight of Security A = 280,000 / 700,000 = 40.00%

22. Given a divisor of 700, the value of the price return index on December 31, 2010 is *closest to*:

A. 1,000

B. 1,125.21

C. 1,035.71

Answer: C

Value of the index on December 31, 2010 = 725,000 / 700 = 1,035.71

23. The price return on Security B is *closest to*:

A. 3.57%

B. −16%

C. 20%

Answer: B

Price return on Security B = (21 / 25) – 1 = –16%

24. The total return on the index is *closest to*:

    A. 8.86%

    B. 3.57%

    C. 7.50%

    Answer: A

    Total dividends = (0.85 × 4,000) + (2.15 × 12,000) + (1.12 × 7,000) = $37,040

    Total return on the index = (725,000 + 37,040 – 700,000) / 700,000 = 8.86%

Use the following information relating to a float-adjusted-market-capitalization-weighted equity index to answer Questions 25 to 30:

Security	Shares Outstanding	% of Shares in the Market Float	Price at the End of 2009 ($)	Price at the End of 2010 ($)	Dividends Per Share ($)
A	20,000	41%	42	38	0.85
B	15,000	37%	54	51	2.15
C	20,000	53%	27	35	1.12

Assume that all dividend payments are made at the end of the year.

25. The number of shares of Security C in the index on December 31, 2010 is *closest to*:

    A. 10,600

    B. 20,000

    C. 8,200

    Answer: A

    Number of shares of Security C = 20,000 × 53% = 10,600

26. The float-adjusted market capitalization of Security A on December 31,

2009 is *closest to*:

A. \$311,600

B. \$344,400

C. \$286,200

Answer: B

Float-adjusted market capitalization of Security A = 20,000 × 41% × 42 = \$344,400

27. The weight of Security B in the index on December 31, 2010 is *closest to*:

A. 29.31%

B. 32.22%

C. 37.02%

Answer: A

Float-adjusted market capitalization of the index:

(20,000 × 0.41 × 38) + (15,000 × 0.37 × 51) + (20,000 × 0.53 × 35) = \$965,650

Float-adjusted market capitalization of Security B = 15,000 × 0.37 × 51 = \$283,050

Weight of Security B = 283,050 / 965,650 = 29.31%

28. Given that the index value on December 31, 2009 was 1,000, the value of the price return index at 31 December 2010 is *closest to*:

A. 1,038

B. 965.65

C. 1,124.17

Answer: A

Float-adjusted-market-capitalization on December 31, 2009:

(20,000 × 0.41 × 42) + (15,000 × 0.37 × 54) + (20,000 × 0.53 × 27) = \$930,300

Divisor = 930,300 / 1,000 = 930.3

Value of the index on December 31, 2010 = 965,650 / 930.3 = 1,038

29. The price return on the index is *closest to*:

A. 3.80%

B. 5.11%

C. 4.28%

Answer: A

Price return on the index = (965,650 / 930,300) – 1 = 3.8%

30. The total return on the index is *closest to*:

A. 5.11%

B. 6.22%

C. 7.11%

Answer: C

Total dividends = (0.85 × 20,000 × 0.41) + (2.15 × 15,000 × 0.37) + (1.12 × 20,000 × 0.53)

Total dividends = $30,774.5

Total return on the index = (965,650 + 30,774.5 – 930,300) / 930,300 = 7.11%

31. Consider the following statements:

Statement 1: The price return of a market-capitalization-weighted equity index will be lower than that of an equal-weighted equity index if large-cap stocks underperform.

Statement 2: The divisor in a price-weighted equity index typically equals the number of shares of each constituent security in the index.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: B

In an equal-weighted equity index large-cap stocks are underrepresented and small-cap stocks are overrepresented compared to a market-capitalization-weighted-equity index. Therefore, underperformance by a large-cap stock will not affect an equal-weighted index as much as it would a market-capitalization-weighted index, and lead to the equal-weighted index having a greater price return than the market-capitalization-weighted index.

The divisor in a price-weighted equity index is typically set to equal the number of constituent securities in an index.

32. A market-capitalization-weighted equity index *most likely*:

   A. Results in arbitrary weights for each security.

   B. Leads to a lower ratio of book value to market value as compared to a fundamental-weighted index.

   C. Assigns a lower weight to a security whose price is relatively low.

   Answer: B

   A price-weighted index results in arbitrary weights for each security.

   A market-capitalization-weighted equity index assigns a lower weight to a security whose market capitalization is relatively low.

   Fundamental-weighted indices have higher ratios of book values, earnings, dividends, and so on, to market value as compared to market-capitalization-weighted indices.

33. A fundamental-weighted index based on the earnings yield *most likely*:

   A. Follows a momentum trading strategy.

   B. Assigns a higher weight to securities whose prices have risen.

   C. Assigns a higher weight to securities with a higher earnings yield.

   Answer: C

   Market-capitalization weighted equity indices follow a momentum trading strategy.

   In contrast to market-capitalization-weighted indices, fundamental-weighted indices have a “contrarian” effect in that the portfolio weights move away from securities whose prices have risen (as higher prices result in a lower earnings yield).

34. Which of the following indices *least likely* requires rebalancing?

   A. Market-capitalization-weighted indices

B. Price-weighted indices

C. Equal-weighted indices

Answer: B

Price-weighted indices do not require rebalancing, as the weight of each constituent security is determined by its price.

Equal-weighted indices require rebalancing most frequently.

Market-capitalization-weighted indices need to be rebalanced to reflect mergers, acquisitions, liquidations, and so on.

35. Consider the following statements:

Statement 1: Rebalancing creates turnover within an index.

Statement 2: In equal-weighted indices, the weights of securities that offer the lowest returns are increased during rebalancing.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

36. Which of the following statements regarding equity indices is *least accurate*?

A. The aggregation of a sector index family is typically equivalent to a broad market index.

B. A broad equity market index represents an entire market.

C. Sector indices are designed to represent multiple security markets.

Answer: C

Multi-market indices usually comprise indices from different countries and are designed to represent multiple security markets.

37. Which of the following is *least likely* an example of a style index?

An index based on:

A. Market capitalization.

B. Economic development groups.

C. Growth stocks.

Answer: B

An index based on economic development groups is an example of a multi-market index.

Style indices include securities based on market capitalization, value, growth, or a combination of these characteristics.

38. Which of the following is *least likely* a challenge in the construction of a fixed-income index?

A. Fixed-income securities are relatively illiquid.

B. The universe of bonds is relatively constant.

C. The number of fixed-income securities is quite large.

Answer: B

One of the challenges in the construction of a fixed-income index is that the universe of bonds is constantly changing.

39. Which of the following statements regarding commodity indices is *least accurate*?

A. Different commodity indices may have very different risk and return profiles.

B. Commodity indices do not have an obvious weighting method.

C. Commodity indices consist of physical commodities.

Answer: C

Commodity indices consist of futures contracts on commodities rather than the actual commodities.

40. Commodity index returns *least likely* reflect:

A. Roll yield.

B. Risk-free interest rate.

C. Changes in actual prices.

Answer: C

Commodity index returns reflect the risk-free interest rate, the changes in future prices, and the roll yield.

41. Real estate investment trust indices can *most likely* be categorized as:

A. Multi-market indices.

B. Appraisal indices.

C. Price-weighted indices.

Answer: B

Real estate investment trust indices can be categorized as:

- Appraisal indices.
- Repeat sales indices.
- Real estate investment trust (REIT) indices.

42. Which of the following is *least likely* a characteristic of hedge fund indices?

A. The index providers determine which hedge funds to include in the index.

B. There is an upward bias in hedge fund performance as represented by these indices.

C. They rely on voluntary disclosures from funds.

Answer: A

In hedge fund indices, rather than index providers determining the constituents, the constituents determine the index.

Reading 47: Market Efficiency

1. Consider the following statements:

   Statement 1: In efficient capital markets, prices only adjust to reflect new information that comes to the market.

   Statement 2: In efficient capital markets, the time taken by security prices to reflect new information is long enough for traders to earn profits with little risk.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

2. Which of the following statements is *least accurate*?

   A. Estimates of intrinsic values and market prices keep changing.

   B. Intrinsic value is determined by the interaction of demand and supply for the security in the market.

   C. Market prices reflect a security's intrinsic value in efficient capital markets.

3. Which of the following is *most accurate* regarding an inefficient capital market?

	Market Prices and Intrinsic Values:	**Preferred Investment Strategy:**
A	Differ	Passive
B	Are the same	Active
C	Differ	Active

4. If a security's market price is greater than its intrinsic value, the investor should *most likely*:

   A. Buy the security as it is undervalued.

B. Sell the security as it is overvalued.

C. Buy the security as it is fairly valued.

5. In an efficient market, overestimating a security's risk will lead to an intrinsic value that is *most likely*:

   A. Equal to the market price.

   B. Greater than the market price.

   C. Lower than the market price.

6. Which of the following *least likely* contributes to market efficiency?

   A. Low transaction costs

   B. Large number of active market participants

   C. Limits to trading

7. Increasing the cost of borrowing shares *most likely*:

   A. Enhances market efficiency.

   B. Has no impact on market efficiency.

   C. Hinders market efficiency.

8. Which of the following efficient market hypotheses assumes that all information is cost-free and available to everyone?

   A. Weak form

   B. Semi-strong form

   C. Strong form

9. Under which of the following efficient market hypotheses is an investor *most likely* to earn an abnormal return based on dividend announcements?

   A. Weak form

   B. Semi-strong form

   C. Strong form

10. Under which of the following efficient market hypotheses is a company director *least likely* to earn abnormal returns consistently?

A. Weak form and semi-strong form only

B. Semi-strong form and strong form only

C. Strong form only

11. Under which of the following efficient market hypotheses is an investor *least likely* to earn consistent abnormal returns based on financial analysis?

    A. Weak form only

    B. Strong form and semi-strong form only

    C. Weak form and semi-strong form only

12. The fact that corporate insiders have been able to earn above-average risk-adjusted profits *most likely*:

    A. Goes against semi-strong form EMH

    B. Goes against strong-form EMH

    C. Supports strong-form EMH

13. Consider the following statements:

    Statement 1: Studies have found that securities markets are strong-form inefficient, which implies that investors can earn superior returns based on material nonpublic information.

    Statement 2: Studies have found that securities markets are semi-strong form efficient, which implies that investors cannot earn superior returns based on financial analysis.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

14. If markets are semi-strong form efficient, portfolio managers should *most likely* follow:

    A. Active portfolio management.

    B. Passive portfolio management.

C. Both active and passive portfolio management.

15. Which of the following is *least likely* a role of a portfolio manager in efficient capital markets?

A. To beat the performance of the market over the long term

B. To diversify the portfolio

C. To manage the portfolio consistent with the portfolio's objectives

16. Consider the following statements:

Statement 1: The weekend effect suggests that returns over the weekends tend to be higher than returns on weekdays.

Statement 2: The holiday effect suggests that returns on stocks in the day prior to market holidays tend to be lower than other days.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

17. Which of the following anomalies suggests buying stocks of companies that have released bad news in the past?

A. Momentum anomaly

B. Earnings surprises

C. Overreaction anomaly

18. According to the "value effect," investors should *least likely* buy stocks which have:

A. High market-to-book ratios.

B. Low price-to-earnings ratios.

C. Above-average dividend yields.

19. Most financial models assume that investors:

A. Are willing to take additional risk even if they are not compensated in the form of higher expected return.

B. Are only willing to take additional risk if they are compensated in the form of higher expected return.

C. Are not willing to take risk even if they are compensated in the form of higher expected return.

20. Overconfidence bias asserts that investors:

A. Tend to inflate stock prices of companies that have released good news.

B. Overprice securities based on new information.

C. Have an inflated view of their ability to process new information appropriately.

21. The phenomena that people ignore their own preferences and follow other people's investment decisions is referred to as:

A. Herding.

B. Gambler's fallacy.

C. Information cascade.

Reading 47: Market Efficiency

1. Consider the following statements:

   Statement 1: In efficient capital markets, prices only adjust to reflect new information that comes to the market.

   Statement 2: In efficient capital markets, the time taken by security prices to reflect new information is long enough for traders to earn profits with little risk.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

   Answer: A

   Only Statement 1 is correct.

   In efficient capital markets, the time frame required for security prices to reflect any new information is very short.

2. Which of the following statements is *least accurate*?

   A. Estimates of intrinsic values and market prices keep changing.

   B. Intrinsic value is determined by the interaction of demand and supply for the security in the market.

   C. Market prices reflect a security's intrinsic value in efficient capital markets.

   Answer: B

   The market value or market price of the asset is determined by the interaction of demand and supply for the security in the market.

   Intrinsic values are estimated in light of all the available information regarding the security. Estimates of intrinsic values are derived by forecasting the amount and timing of the security's future cash flows, and then discounting them at an appropriate discount rate.

3. Which of the following is *most accurate* regarding an inefficient capital market?

	Market Prices and Intrinsic Values:	Preferred Investment Strategy:
A	Differ	Passive
B	Are the same	Active
C	Differ	Active

Answer: C

In inefficient capital markets, opportunities may exist for an active investment strategy to achieve superior risk-adjusted returns as market prices differ from securities' intrinsic values.

4. If a security's market price is greater than its intrinsic value, the investor should *most likely*:

A. Buy the security as it is undervalued.

B. Sell the security as it is overvalued.

C. Buy the security as it is fairly valued.

Answer: B

If a security's market price is greater than its intrinsic value, it is overvalued and the investor should sell it.

5. In an efficient market, overestimating a security's risk will lead to an intrinsic value that is *most likely*:

A. Equal to the market price.

B. Greater than the market price.

C. Lower than the market price.

Answer: C

Overestimating a security's risk will lead to a higher discount rate which, in turn, will cause the intrinsic value estimate to be lower than the market price.

6. Which of the following *least likely* contributes to market efficiency?

A. Low transaction costs

B. Large number of active market participants

C. Limits to trading

Answer: C

Limitations on trading reduce market efficiency.

7. Increasing the cost of borrowing shares *most likely*:

   A. Enhances market efficiency.

   B. Has no impact on market efficiency.

   C. Hinders market efficiency.

   Answer: C

   Higher cost of borrowing shares limits short selling, which impedes market efficiency.

8. Which of the following efficient market hypotheses assumes that all information is cost-free and available to everyone?

   A. Weak form

   B. Semi-strong form

   C. Strong form

   Answer: C

   Strong-form EMH assumes that all information is cost-free and available to everyone.

9. Under which of the following efficient market hypotheses is an investor *most likely* to earn an abnormal return based on dividend announcements?

   A. Weak form

   B. Semi-strong form

   C. Strong form

   Answer: A

   Weak-form EMH asserts that abnormal returns cannot be easily earned by using trading rules and technical analysis. It does not encompass security market information.

10. Under which of the following efficient market hypotheses is a company director *least likely* to earn abnormal returns consistently?

    A. Weak form and semi-strong form only

    B. Semi-strong form and strong form only

    C. Strong form only

    Answer: C

    Strong-form EMH asserts that no one can consistently achieve abnormal risk-adjusted returns.

11. Under which of the following efficient market hypotheses is an investor *least likely* to earn consistent abnormal returns based on financial analysis?

    A. Weak form only

    B. Strong form and semi-strong form only

    C. Weak form and semi-strong form only

    Answer: B

    Semi-strong form EMH asserts that investors cannot earn abnormal risk-adjusted returns if their investment decisions are based on important information after it has been made public. Strong-form EMH encompasses semi-strong form EMH.

12. The fact that corporate insiders have been able to earn above-average risk-adjusted profits *most likely*:

    A. Goes against semi-strong form EMH.

    B. Goes against strong-form EMH.

    C. Supports strong-form EMH.

    Answer: B

    There is evidence that corporate insiders have been able to earn above-average risk-adjusted profits consistently, which goes against strong-form EMH.

13. Consider the following statements:

Statement 1: Studies have found that securities markets are strong-form inefficient, which implies that investors can earn superior returns based on material nonpublic information.

Statement 2: Studies have found that securities markets are semi-strong form efficient, which implies that investors cannot earn superior returns based on financial analysis.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

14. If markets are semi-strong form efficient, portfolio managers should *most likely* follow:

A. Active portfolio management.

B. Passive portfolio management.

C. Both active and passive portfolio management.

Answer: B

If markets are semi-strong form efficient, active management is not likely to earn superior risk-adjusted returns on a consistent basis. Therefore, passive portfolio management strategies should be pursued.

15. Which of the following is *least likely* a role of a portfolio manager in efficient capital markets?

A. To beat the performance of the market over the long term

B. To diversify the portfolio

C. To manage the portfolio consistent with the portfolio's objectives

Answer: A

In efficient capital markets, the role of a portfolio manager is not necessarily to beat the market, but to manage the portfolio in light of the investor's risk and return objectives.

16. Consider the following statements:

Statement 1: The weekend effect suggests that returns over the weekends tend to be higher than returns on weekdays.

Statement 2: The holiday effect suggests that returns on stocks in the day prior to market holidays tend to be lower than other days.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: B

The weekend effect suggests that returns on weekends tend to be lower than returns on weekdays.

The holiday effect suggests that returns on stocks in the day prior to market holidays tend to be higher than other days.

17. Which of the following anomalies suggests buying stocks of companies that have released bad news in the past?

A. Momentum anomaly

B. Earnings surprises

C. Overreaction anomaly

Answer: C

The overreaction anomaly suggests that investors tend to inflate (depress) stock prices of companies that have released good (bad) news. Studies have shown that "losers" (stocks that have witnessed a recent price decline due to the release of bad news) have outperformed the market in subsequent periods, while winners have underperformed in subsequent periods.

18. According to the "value effect," investors should *least likely* buy stocks which have:

A. High market-to-book ratios.

B. Low price-to-earnings ratios.

C. Above-average dividend yields.

Answer: A

The value effect suggests that value stocks, which generally have below-average price-to-earnings and market-to-book ratios, and above-average dividend yields, have consistently outperformed over the long run.

19. Most financial models assume that investors:

    A. Are willing to take additional risk even if they are not compensated in the form of higher expected return.

    B. Are only willing to take additional risk if they are compensated in the form of higher expected return.

    C. Are not willing to take risk even if they are compensated in the form of higher expected return.

    Answer: B

    Most financial models assume that investors are risk averse, which means that they are only willing to take additional risk if they are compensated in the form of higher expected returns.

    Choice A describes a risk-seeker investor.

20. Overconfidence bias asserts that investors:

    A. Tend to inflate stock prices of companies that have released good news.

    B. Overprice securities based on new information.

    C. Have an inflated view of their ability to process new information appropriately.

    Answer: C

    Overconfidence bias asserts that investors have an inflated view of their ability to process new information appropriately. This leads to stocks being mispriced, but not necessarily overpriced.

    The overreaction anomaly suggests that investors tend to inflate (depress) stock prices of companies that have released good (bad) news.

21. The phenomena that people ignore their own preferences and follow other people's investment decisions is referred to as:

A. Herding.

B. Gambler's fallacy.

C. Information cascade.

Answer: C

Herding is clustered trading that may or may not be based on information.

Gambler's fallacy is a behavioral theory which suggests that recent outcomes affect investors' estimates of future probabilities.

Reading 48: Overview of Equity Securities

1. A company is contractually obligated to repay the amount it receives from:

   A. Both debt holders and shareholders.

   B. Debt holders but not its shareholders.

   C. Shareholders but not its debt holders.

2. Which of the following voting methods provides a better representation of minority shareholders on the board?

   A. Cumulative voting

   B. Statutory voting

   C. Aggregate voting

3. Jemco Tech is considering issuing shares to the public. The company does not want these shares to have voting rights, but wants to give investors the option to sell the shares to the company at a later date at a predetermined price. Which of the following is the company *most likely* to issue?

   A. Callable common shares

   B. Convertible preference shares

   C. Putable preference shares

4. Callable common shares are *most likely* to be exercised when the call price is:

   A. Higher than their intrinsic value.

   B. Lower than their market price.

   C. Lower than their intrinsic value.

5. Which of the following has the *highest* claim on a company's net assets in case of liquidation?

   A. Cumulative preference shares

B. Convertible bonds

C. Participating preference shares

6. If a company only wants to give a fixed preferred dividend and the par value of shares in case of liquidation and also does not want to accrue dividends over time, it is *most likely* to issue:

   A. Participating preference shares.

   B. Cumulative preference shares.

   C. Nonparticipating preference shares.

7. Which of the following is *least likely* a characteristic of private equity securities?

   A. Their prices can only be obtained from dealers.

   B. The issuing companies are not required to publish financial statements.

   C. They are highly illiquid.

8. When a public company is bought by a group of investors comprising of the company's management through the use of debt and then taken private, it is *most likely* referred to as a:

   A. Leveraged buyout.

   B. Venture capital investment.

   C. Management buyout.

9. Which of the following is *least likely* a disadvantage for investors in public companies compared to private companies?

   A. Public companies tend to be more open about their policies.

   B. Public companies have a shorter time horizon.

   C. Public companies need to bear additional costs to meet regulatory requirements.

10. Which of the following is *least likely* a benefit of listing a company on an international exchange?

    A. It enhances the liquidity of the company's shares.

B. It improves awareness about the company's products and services.

C. It increases costs of meeting filing requirements.

11. Which of the following is *most likely* an implication of direct investing in equity securities of foreign companies?

    A. Investors need to be familiar with the regulations and procedures of the foreign market.

    B. All transactions are in the investor's domestic currency.

    C. It reduces volatility due to limited liquidity.

12. In which of the following types of depository receipts does the depository enjoy the same rights as a direct owner of the company's common shares?

    A. Unsponsored depository receipt

    B. Preferred depository receipt

    C. Sponsored depository receipt

13. Consider the following statements:

    Statement 1: A global depository receipt offers more flexibility than a global registered share.

    Statement 2: Global depository receipts are issued by the depository bank anywhere in the world outside of the company's home country.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

14. An analyst gathered the following information regarding Violet Inc.:

    Share price on January 1, 2010 = \$54

    Share price on December 31, 2010 = \$48

    Dividend paid = \$1.5

    The total return on the stock is *closest to*:

    A. −8.33%

B. −9.38%

C. 13.89%

15. Which of the following statements is *least accurate*?

   A. Investors in foreign shares incur foreign exchange losses when the foreign currency appreciates.

   B. Companies in mature stages are more likely to pay dividends as they may not have many growth opportunities to avail.

   C. Studies have shown that the compounding effect of reinvested dividends have significantly influenced long-run returns on equity securities.

16. Which of the following has the *most* amount of risk for an investor?

   A. Putable common shares

   B. Preference shares

   C. Noncallable common shares

17. Which of the following has the *least* amount of risk for an investor?

   A. Callable preference shares

   B. Callable common shares

   C. Noncallable preference shares

18. Consider the following statements:

   Statement 1: Noncumulative preference shares are more risky than cumulative preference shares as they do not accrue dividends.

   Statement 2: Preference shares are less risky than common shares as the amount of dividends is known and fixed.

   Which of the following is *most likely*?

   A. Only one statement is correct.

   B. Both statements are incorrect.

   C. Both statements are correct.

19. Which of the following statements is *most accurate*?

A. A price-to-book ratio that is higher than the industry average suggests that investors believe that the company has more significant future growth opportunities than its industry peers.

B. Management cannot directly influence the book value of a company.

C. Companies in mature industries will have a higher average price-to-book ratio than companies in high growth industries.

20. Which of the following statements regarding a company's return on equity (ROE) is *least accurate*?

A. An increase in ROE is always a positive sign for the company.

B. It may not always be easy to compare ROE for the same firm over time.

C. ROE indicates the efficiency of the firm in generating profits from every dollar of net assets.

21. Consider the following statements:

Statement 1: A company's cost of equity equals the investor's minimum required rate of return on equity.

Statement 2: The minimum required rate of return for providers of debt capital to the company equals the periodic interest rate that they charge the company.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Reading 48: Overview of Equity Securities

1. A company is contractually obligated to repay the amount it receives from:

   A. Both debt holders and shareholders.

   B. Debt holders but not its shareholders.

   C. Shareholders but not its debt holders.

   Answer: B

   A company is contractually obligated to repay the amount it receives from debt holders. However, issuing equity does not give rise to a liability. Shareholders have a residual claim on the company's assets after all liabilities have been paid.

2. Which of the following voting methods provides a better representation of minority shareholders on the board?

   A. Cumulative voting

   B. Statutory voting

   C. Aggregate voting

   Answer: A

   Cumulative voting provides a better representation of minority shareholders on the board. For example, when electing the board of directors, total voting rights in cumulative voting are based on the number of shares owned multiplied by the number of board of directors being elected.

3. Jemco Tech is considering issuing shares to the public. The company does not want these shares to have voting rights, but wants to give the investors the option to sell the shares to the company at a later date at a predetermined price. Which of the following is the company *most likely* to issue?

   A. Callable common shares

   B. Convertible preference shares

C. Putable preference shares

Answer: C

Putable preference shares generally do not have voting rights, unless explicitly allowed for at issuance. Further, they give the investors the right, but not the obligation, to sell their shares back to the issuing company at the put price (which is specified when the shares are originally issued).

Callable common shares give the issuing company the right, but not the obligation, to buy back shares from investors at a later date at the call price (which is specified when the shares are originally issued).

Convertible preference shares are convertible into a specified number of common shares based on a conversion ratio that is determined at issuance.

4. Callable common shares are *most likely* to be exercised when the call price is:

A. Higher than their intrinsic value.

B. Lower than their market price.

C. Lower than their intrinsic value.

Answer: B

Companies are likely to buy back shares when their market price is higher than the call price.

5. Which of the following has the *highest* claim on a company's net assets in case of liquidation?

A. Cumulative preference shares

B. Convertible bonds

C. Participating preference shares

Answer: B

In case of liquidation, preference shares have a higher priority in claims on the company's net assets than common shares. However, they still have a lower priority than bondholders.

6. If a company only wants to give a fixed preferred dividend and the par

value of shares in case of liquidation and also does not want to accrue dividends over time, it is *most likely* to issue:

A. Participating preference shares.

B. Cumulative preference shares.

C. Nonparticipating preference shares.

Answer: C

Nonparticipating preference shares are only entitled to a fixed preferred dividend and the par value of shares in case of liquidation.

Participating preference shares are entitled to preferred dividends plus additional dividends if the company's profits exceed a pre-specified level.

Cumulative preference shares accrue dividends over time that must be paid in full before dividends on common shares can be paid.

7. Which of the following is *least likely* a characteristic of private equity securities?

   A. Their prices can only be obtained from dealers.

   B. The issuing companies are not required to publish financial statements.

   C. They are highly illiquid.

   Answer: A

   There is no active secondary market for private equities as they are not listed on public exchanges. Therefore, they do not have market-determined quoted prices.

8. When a public company is bought by a group of investors comprising of the company's management through the use of debt and then taken private, it is *most likely* referred to as a:

   A. Leveraged buyout.

   B. Venture capital investment.

   C. Management buyout.

   Answer: C

A leveraged buyout occurs when a group of investors uses debt financing to purchase all of the company's outstanding common shares of a publicly traded company, which is then taken private.

In cases where the group of investors acquiring the company is primarily comprised of the company's existing management, the transaction is referred to as a management buyout.

9. Which of the following is *least likely* a disadvantage for investors in public companies compared to private companies?

   A. Public companies tend to be more open about their policies.

   B. Public companies have a shorter time horizon.

   C. Public companies need to bear additional costs to meet regulatory requirements.

   Answer: A

   One of the advantages of public companies is that they are encouraged to be more open about their policies, which ensures that they act in shareholders' interests.

   The other two statements are disadvantages of public companies relative to private companies.

10. Which of the following is *least likely* a benefit of listing a company on an international exchange?

   A. It enhances the liquidity of the company's shares.

   B. It improves awareness about the company's products and services.

   C. It increases costs of meeting filing requirements.

   Answer: C

   Listing a company on an international exchange increases its transparency due to the additional market exposure and the need to meet a greater number of filing requirements.

11. Which of the following is *most likely* an implication of direct investing in equity securities of foreign companies?

   A. Investors need to be familiar with the regulations and procedures of the foreign market.

B. All transactions are in the investor's domestic currency.

C. It reduces volatility due to limited liquidity.

Answer: A

Implications of direct investing in equity securities of foreign companies include the following:

- Investors need to be familiar with the regulations and procedures of the foreign market.
- All transactions are in the company's, not the investor's, domestic currency.
- Investing directly may lead to:
  - Less transparency (due to unavailability of audited financial statements on a regular basis); and
  - Increased volatility (due to limited liquidity).

12. In which of the following types of depository receipts does the depository enjoy the same rights as a direct owner of the company's common shares?

A. Unsponsored depository receipt

B. Preferred depository receipt

C. Sponsored depository receipt

Answer: A

In an unsponsored DR, the depositor enjoys the same rights as a direct owner of the company's common shares.

In a sponsored DR, the investor enjoys the same rights as a direct owner of the company's common shares.

There are no preferred depository receipts.

13. Consider the following statements:

Statement 1: A global depository receipt offers more flexibility than a global registered share.

Statement 2: Global depository receipts are issued by the depository bank anywhere in the world outside of the company's home country.

Which of the following is *most likely*?

A. Only one statement is correct.

B. Both statements are incorrect.

C. Both statements are correct.

Answer: B

A global registered share offers more flexibility than depository receipts as the shares represent actual ownership in the issuing company, they can be traded anywhere, and currency conversions are not required to trade them.

Global depository receipts are issued by the depository bank outside of the company's home country and outside of the United States.

14. An analyst gathered the following information regarding Violet Inc.:

Share price on January 1, 2010 = $54

Share price on December 31, 2010 = $48

Dividend paid = $1.5

The total return on the stock is *closest to*:

A. −8.33%

B. −9.38%

C. 13.89%

Answer: A

Total return = (48 – 54 + 1.5) / 54 = −8.33%

15. Which of the following statements is *least accurate*?

A. Investors in foreign shares incur foreign exchange losses when the foreign currency appreciates.

B. Companies in mature stages are more likely to pay dividends as they may not have many growth opportunities to avail.

C. Studies have shown that the compounding effect of reinvested dividends have significantly influenced long-run returns on equity securities.

Answer: A

Investors in foreign share incur foreign exchange losses when the foreign currency depreciates (domestic currency appreciates).

16. Which of the following has the *most* amount of risk for an investor?

    A. Putable common shares

    B. Preference shares

    C. Noncallable common shares

    Answer: C

    Preference shares are less risky than common shares.

    Putable common shares are less risky than callable or noncallable common shares.

17. Which of the following has the *least* amount of risk for an investor?

    A. Callable preference shares

    B. Callable common shares

    C. Noncallable preference shares

    Answer: C

    Callable common and preference shares are more risky than their noncallable counterparts.

18. Consider the following statements:

    Statement 1: Noncumulative preference shares are more risky than cumulative preference shares as they do not accrue dividends.

    Statement 2: Preference shares are less risky than common shares as the amount of dividends is known and fixed.

    Which of the following is *most likely*?

    A. Only one statement is correct.

    B. Both statements are incorrect.

    C. Both statements are correct.

    Answer: C

Both statements are indeed correct.

19. Which of the following statements is *most accurate*?

    A. A price-to-book ratio that is higher than the industry average suggests that investors believe that the company has more significant future growth opportunities than its industry peers.

    B. Management cannot directly influence the book value of a company.

    C. Companies in mature industries will have a higher average price-to-book ratio than companies in high growth industries.

    Answer: A

    A company's management can directly influence the book value (e.g., by retaining net income).

    Companies in high growth industries will have a higher average price-to-book ratio than companies in mature industries.

20. Which of the following statements regarding a company's return on equity (ROE) is *least accurate*?

    A. An increase in ROE is always a positive sign for the company.

    B. It may not always be easy to compare ROE for the same firm over time.

    C. ROE indicates the efficiency of the firm in generating profits from every dollar of net assets.

    Answer: A

    An increase in ROE may not always be a positive sign for the company. For example, it may be the result of net income decreasing at a slower rate than shareholders' equity.

    It may not always be easy to compare ROE for the same firm over time if accounting methods have changed.

21. Consider the following statements:

    Statement 1: A company's cost of equity equals the investor's minimum required rate of return on equity.

    Statement 2: The minimum required rate of return for providers of debt capital to the company equals the periodic interest rate that they charge the company.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

For investors who provide equity capital to the company, the future cash flows that they expect to receive are uncertain and so their minimum required rate of return must be estimated. Further, each investor may have different expectations regarding future cash flows. Therefore, the company's cost of equity may be different from investors' minimum required rate of return on equity.

Reading 49: Introduction to Industry and Company Analysis

1. Classifying companies based on statistical similarities *most likely*:
   A. Results in nonintuitive groups of companies.
   B. Places them in an industry based on their principal business activities.
   C. Results in arbitrary classification of companies.
2. The revenues and profits of which of the following industries is *least* affected by fluctuations in overall economic activity?
   A. Growth industries
   B. Cyclical industries
   C. Defensive industries
3. Which of the following industry classification systems has a three-tier structure?
   A. Industry Classification Benchmark
   B. Global Industry Classification Standard
   C. Russell Global Sectors
4. Which of the following industry classification systems distinguishes between consumer goods and consumer services?
   A. Industry Classification Benchmark
   B. Russell Global Sectors
   C. Global Industry Classification Standard
5. Which of the following industry classification systems uses four levels of detail?
   A. Australian and New Zealand Standard Industrial Classification (ANZSIC)
   B. North American Industry Classification System (NAICS)

C. Statistical Classification of Economic Activities in the European Community (NACE)

6. Which of the following industry classification systems distinguishes between an establishment and an enterprise?

   A. North American Industry Classification System (NAICS)

   B. Statistical Classification of Economic Activities in the European Community (NACE)

   C. Australian and New Zealand Standard Industrial Classification (ANZSIC)

7. Which of the following statements regarding industry classification systems is *least accurate*?

   A. Government classification systems are usually updated less frequently than commercial classification systems.

   B. Commercial classification systems generally do not distinguish between for-profit and not-for-profit organizations.

   C. Government classification systems generally do not disclose information about a specific business or company.

8. Which of the following is *least likely* a step in constructing a preliminary list of peer companies?

   A. Review the subject company's annual report to identify any mention of competitors.

   B. Review industry trade publications to identify comparable companies.

   C. Examine government industry classification systems to identify companies operating in the same industry.

9. The experience curve *most likely* shows:

   A. Indirect costs per unit of good or service produces as a typically declining function of cumulative output.

   B. Direct costs per unit of good or service produced as a typically declining function of cumulative output.

   C. Direct costs per unit of good or service produced as a typically increasing function of cumulative output.

10. Companies in industries with low barriers to entry and a small number of customers *least likely* have:

    A. The power to determine prices.

    B. High threat of new entrants.

    C. High bargaining power of customers.

11. Which of the following is *least likely* one of the five forces that Porter identified for analyzing an industry?

    A. Intensity of rivalry between competitors

    B. Economies of scale

    C. Bargaining power of customers

12. Mercury Inc. operates in an industry that has the following characteristics:

    - Four competitors providing differentiated products
    - High variable costs relative to fixed costs
    - Low exit barriers
    - Large number of suppliers of raw material located all over the world

    Which of the following regarding this industry is *most accurate*?

	Intensity of Rivalry	**Bargaining Power of Suppliers**
A	High	High
B	Low	Low
C	High	Low

13. The barriers to entry in an industry are *least likely* to be low if:

    A. It is easy to attract new customers.

    B. A small number of firms have entered the industry over time.

    C. Existing firms are not able to enjoy economic profits for long periods of time.

14. Industries with high barriers to entry may still not have pricing power if:

    A. There are a small number of competitors.

    B. There are a large number of customers.

    C. There are high exit barriers.

15. Which of the following statements regarding industry concentration is *least accurate*?

    A. Firms in less concentrated industries have more pricing power.

    B. Competition is fierce among companies in high concentration industries that sell similar products.

    C. High concentration industries may have fierce competition due to high exit barriers.

16. In which of the following industries are firms likely to have *greater* pricing power?

    A. Industries in which products have low switching costs and new products are frequently introduced.

    B. Industries in which demand exceeds supply.

    C. Industries with low barriers to entry.

17. All else remaining the same, which of the following factors are *most likely* to result in low profitability for a firm in a competitive industry?

    A. High industry concentration, high switching costs, low threat of substitute products.

    B. Low switching costs, low industry concentration, high threat of substitute products.

    C. Low barriers to exit, product differentiation, low threat of substitute products.

18. At which of the following stages during the industry life-cycle is the threat of new entrants the *greatest*?

    A. Shakeout

    B. Growth

C. Decline

19. Companies in the mature stage of the industry life-cycle should *most likely*:

    A. Focus on building customer loyalty.

    B. Focus on introducing revolutionary new products.

    C. Focus on extending successful product lines.

20. Which of the following statements regarding companies in industries in the shakeout stage is *least accurate*?

    A. Companies start to focus on their cost structures.

    B. Demand growth remains fairly constant.

    C. There is intense competition among existing firms.

21. Which of the following is *least likely* a limitation of industry life-cycle analysis?

    A. It can only be used to analyze industries experiencing rapid change.

    B. All companies in an industry may not display similar performance.

    C. Other factors may affect the stages and duration of the industry life-cycle.

22. Which of the following is *least likely* a competitive strategy identified by Porter?

    A. Product differentiation strategy

    B. Diversification strategy

    C. Low cost strategy

Reading 49: Introduction to Industry and Company Analysis

1. Classifying companies based on statistical similarities *most likely*:

   A. Results in nonintuitive groups of companies.

   B. Places them in an industry based on their principal business activities.

   C. Results in arbitrary classification of companies.

   Answer: A

   Classifying companies based on statistical similarities often results in nonintuitive groups of companies as companies are grouped together on the basis of correlations of historical returns.

   Classifying companies on the basis of products and/or services supplied places them in an industry based on their principal business activities.

   Classifying companies based on business cycle sensitivities results in arbitrary classification of companies.

2. The revenues and profits of which of the following industries is *least* affected by fluctuations in overall economic activity?

   A. Growth industries

   B. Cyclical industries

   C. Defensive industries

   Answer: C

   Defensive industries and companies are those whose profits are least affected by fluctuations in overall economic activity.

   Growth industries are those whose specific demand dynamics override economic factors in determining their performance. These industries generate growth irrespective of overall economic conditions; however, their growth rates may decline in recessions.

Cyclical industries are those whose profits are strongly correlated with the strength of the overall economy.

3. Which of the following industry classification systems has a three-tier structure?

   A. Industry Classification Benchmark

   B. Global Industry Classification Standard

   C. Russell Global Sectors

   Answer: C

   Russell Global Sectors classification system uses a three-tier structure, whereas the other two use a four-tier structure.

4. Which of the following industry classification systems distinguishes between consumer goods and consumer services?

   A. Industry Classification Benchmark

   B. Russell Global Sectors

   C. Global Industry Classification Standard

   Answer: A

   Industry Classification Benchmark distinguishes between consumer goods and consumer services, whereas the other two systems group consumer products companies and consumer goods services companies together into sectors on the basis of economic sensitivity.

5. Which of the following industry classification systems uses four levels of detail?

   A. Australian and New Zealand Standard Industrial Classification (ANZSIC)

   B. North American Industry Classification System (NAICS)

   C. Statistical Classification of Economic Activities in the European Community (NACE)

   Answer: C

   The other two systems use five levels of detail.

6. Which of the following industry classification systems distinguishes

between an establishment and an enterprise?

A. North American Industry Classification System (NAICS)

B. Statistical Classification of Economic Activities in the European Community (NACE)

C. Australian and New Zealand Standard Industrial Classification (ANZSIC)

Answer: A

NAICS distinguishes between establishments and enterprises.

7. Which of the following statements regarding industry classification systems is *least accurate*?

   A. Government classification systems are usually updated less frequently than commercial classification systems.

   B. Commercial classification systems generally do not distinguish between for-profit and not-for-profit organizations.

   C. Government classification systems generally do not disclose information about a specific business or company.

   Answer: B

   Government classification systems generally do not distinguish between for-profit and not-for-profit organizations.

8. Which of the following is *least likely* a step in constructing a preliminary list of peer companies?

   A. Review the subject company's annual report to identify any mention of competitors.

   B. Review industry trade publications to identify comparable companies.

   C. Examine government industry classification systems to identify companies operating in the same industry.

   Answer: C

   An analyst should examine commercial industry classification systems to identify companies operating in the same industry. This is because most government systems do not disclose information about specific businesses or companies, so an analyst does not have access to the constituents of a particular category.

9. The experience curve *most likely* shows:

   A. Indirect costs per unit of good or service produces as a typically declining function of cumulative output.

   B. Direct costs per unit of good or service produced as a typically declining function of cumulative output.

   C. Direct costs per unit of good or service produced as a typically increasing function of cumulative output.

   Answer: B

   The experience curve shows direct costs per unit of good or service produced as a typically declining function of cumulative output.

10. Companies in industries with low barriers to entry and a small number of customers *least likely* have:

    A. The power to determine prices.

    B. High threat of new entrants.

    C. High bargaining power of customers.

    Answer: A

    Bargaining power of customers refers to the leverage enjoyed by customers in their dealings with the company. If the number of customers is small, they can be tough negotiators when it comes to determining prices. Therefore, the bargaining power of customers is high.

    Further, low barriers to entry give rise to high threat of new entrants.

11. Which of the following is *least likely* one of the five forces that Porter identified for analyzing an industry?

    A. Intensity of rivalry between competitors

    B. Economies of scale

    C. Bargaining power of customers

    Answer: B

Porter identified the following five forces:

- Threat of substitute products
- Bargaining power of customers
- Bargaining power of suppliers
- Threat of new entrants
- Intensity of rivalry

12. Mercury Inc. operates in an industry that has the following characteristics:

    - Four competitors providing differentiated products
    - High variable costs relative to fixed costs
    - Low exit barriers
    - Large number of suppliers of raw material located all over the world

    Which of the following regarding this industry is *most accurate*?

	Intensity of Rivalry	Bargaining Power of Suppliers
A	High	High
B	Low	Low
C	High	Low

    Answer: B

    The intensity of rivalry in an industry with few participants providing differentiated products, high variable costs, and low exit barriers is generally low. Further, the number of suppliers is large, so the companies have higher bargaining power.

13. The barriers to entry in an industry are *least likely* to be low if:

    A. It is easy to attract new customers.

    B. A small number of firms have entered the industry over time.

    C. Existing firms are not able to enjoy economic profits for long periods of time.

Answer: B

If a small number of firms have entered the industry over time, then the barriers to entry are likely to be high.

If it is easy to attract new customers and firms are not able to enjoy economic profits for long periods of time, then barriers to entry are likely to be low.

14. Industries with high barriers to entry may still not have pricing power if:

    A. There are a small number of competitors.

    B. There are a large number of customers.

    C. There are high exit barriers.

    Answer: C

    Industries with high barriers to entry may still not have pricing power because:

    - Price may be a large component of the customers' purchase decision.
    - There may be high barriers to exit.

    A small number of competitors and a large number of customers lead to an increase in the companies' pricing power.

15. Which of the following statements regarding industry concentration is *least accurate*?

    A. Firms in less concentrated industries have more pricing power.

    B. Competition is fierce among companies in high concentration industries that sell similar products.

    C. High concentration industries may have fierce competition due to high exit barriers.

    Answer: A

    Firms in less concentrated industries (large number of firms) have little or no pricing power.

16. In which of the following industries are firms likely to have *greater*

pricing power?

A. Industries in which products have low switching costs and new products are frequently introduced.

B. Industries in which demand exceeds supply.

C. Industries with low barriers to entry.

Answer: B

Firms enjoy more pricing power in industries in which demand exceeds supply as it increases the bargaining power of suppliers.

Firms in industries in which products have low switching costs and new products are frequently introduced enjoy low pricing power.

Industries with low barriers to entry result in unstable market shares of companies so they do not have much pricing power.

17. All else remaining the same, which of the following factors are *most likely* to result in low profitability for a firm in a competitive industry?

A. High industry concentration, high switching costs, low threat of substitute products.

B. Low switching costs, low industry concentration, high threat of substitute products.

C. Low barriers to exit, product differentiation, low threat of substitute products.

Answer: B

All else remaining the same, low switching costs, low industry concentration, and a high threat of substitute products will result in a lower profitability for a firm in a competitive industry.

18. At which of the following stages during the industry life-cycle is the threat of new entrants the *greatest*?

A. Shakeout

B. Growth

C. Decline

Answer: B

In the growth stage, demand increases rapidly, prices fall due to economies of scale, and there is a high threat of new competitors entering the industry because of low barriers to entry.

In the shakeout stage, profitability declines and there is intense competition among existing firms which eliminates any economic profits, therefore reducing the threat of new entrants.

In the decline stage, there is negative growth and excess capacity due to which firms start to compete on price. At this stage, weaker firms often exit the industry.

19. Companies in the mature stage of the industry life-cycle should *most likely*:

    A. Focus on building customer loyalty.

    B. Focus on introducing revolutionary new products.

    C. Focus on extending successful product lines.

    Answer: C

    Companies in the growth stage should focus on building customer loyalty and reinvest heavily into the business in order to take advantage of available opportunities.

    Companies in the mature stage should focus on extending successful product lines rather than introducing revolutionary new products.

20. Which of the following statements regarding companies in industries in the shakeout stage is *least accurate*?

    A. Companies start to focus on their cost structures.

    B. Demand growth remains fairly constant.

    C. There is intense competition among existing firms.

    Answer: B

    During the shakeout stage, the growth rate in demand slows down.

21. Which of the following is *least likely* a limitation of industry life-cycle analysis?

    A. It can only be used to analyze industries experiencing rapid change.

B. All companies in an industry may not display similar performance.

C. Other factors may affect the stages and duration of the industry life-cycle.

Answer: A

Industry life-cycle analysis is most useful in analyzing industries during periods of relative stability. It is not as useful in analyzing industries experiencing rapid change.

22. Which of the following is *least likely* a competitive strategy identified by Porter?

A. Product differentiation strategy

B. Diversification strategy

C. Low cost strategy

Answer: B

Porter identified two main competitive strategies:

- Cost leadership (low cost)
- Product/service differentiation

Reading 50: Equity Valuation: Concepts and Basic Tools

1. An estimate of common share value can be obtained indirectly from enterprise value by:

   A. Adding cash and short-term investments to it.

   B. Subtracting liabilities and preferred dividends from it and adding cash and short-term investments to it.

   C. Subtracting cash and short-term investments from it.

2. To arrive at the same intrinsic value estimate for a security, two investors should *least likely* have the same:

   A. Holding periods.

   B. Required rates of return.

   C. Growth expectations.

3. Alpha Ltd. just paid a dividend of $4.20 per share, which is expected to grow at a rate of 15%. An analyst expects the price of the stock after one year to be $38.50. Given a required return on equity of 14%, the value of the company's stock today is *closest to*:

   A. $37

   B. $36

   C. $38

4. An analyst gathered the following information regarding Global Traders:

   Current dividend per share = $3.80

   Expected growth rate = 12%

   Required return on equity = 8.6%

   The analyst expects the price of the stock after 2 years to be $43.20. The value of the company's stock today is *closest to*:

A. $42.34

B. $44.59

C. $46.67

5. Federova's broker tells her that Cool Water Inc. is expected to pay a dividend of $3.20 per share for the foreseeable future. She purchases 100 shares of the company, which are currently being traded at $32 per share. Given a required rate of return of 11%, the intrinsic value of the stock is *closest to*:

   A. $29

   B. $32

   C. $24

6. A retraction option on a preferred stock will *most likely*:

   A. Increase the value of the preferred stock.

   B. Decrease the value of the preferred stock.

   C. Have no effect on the value of the preferred stock.

7. Which of the following will *least likely* increase the intrinsic value of a stock using the infinite period DDM?

   A. An increase in next year's dividend payment.

   B. A decreasing in the growth rate of dividends.

   C. A decreasing in the required rate of return.

8. An analyst gathered the following information regarding Dolphin Inc.:

   Risk-free rate of return = 6%

   Required rate of return = 15%

   Given that the company is expected to pay a dividend of $2.80, which is expected to grow at 14% forever, the value of the stock today is *closest to*:

   A. $280

   B. $319

   C. $311

9. Allison is evaluating the following investment options:

   Option A: Invest in Alpha Corp.'s shares which are currently trading at \$27 per share. The company's current dividend of \$3.20 is expected to continue forever.

   Option B: Invest in Beta Corp.'s shares which are currently trading at \$41 per share. The company's current dividend of \$2.40 is expected to grow at 8% and the expected price of the company's shares at the end of one year is expected to be \$42 per share.

   Given her required rate of return of 11%, she should *most likely* invest in:

   A. Alpha Corp.'s shares only

   B. Beta Corp.'s shares only

   C. Both companies' shares

10. Elena is interested in buying Indigo Company's shares which are trading at \$23 each. She heard that the company's current dividend of \$2.80 is expected to continue for the foreseeable future. Given that the current market price of the shares exceed their intrinsic value by \$4, the required rate of return is *closest to*:

    A. 12.17%

    B. 14.74%

    C. 10.37%

11. Which of the following is *most likely* an assumption of the infinite period DDM?

    A. The dividend growth rate must be greater than the required rate of return.

    B. The dividend growth rate must be constant.

    C. The risk-free rate is greater than the dividend growth rate.

12. If the intrinsic value of a stock is less than its current market price, an analyst should *most likely*:

    A. Buy the stock because the expected return is higher than the required return for the stock given its beta.

B. Sell the stock because the expected return is lower than the required return for the stock given its beta.

C. Buy the stock because the expected return is lower than the required return for the stock given its beta.

13. An analyst gathered the following information regarding Venus Inc.:

    Current market share price = \$6.25

    Dividend payout ratio = 0.4

    Cost of equity = 12%

    Given that dividends are expected to grow at a rate of 7% indefinitely, the company's P/E ratio is *closest to*:

    A. 8

    B. 125

    C. 52

14. Which of the following models is *most likely* used to value a "supernormal growth" company?

    A. Infinite period DDM

    B. DDM for multiple holding periods

    C. Multi-stage DDM

15. Blue Rose Inc. currently pays a dividend of \$2.40 per share, which is expected to grow at a rate of 13%. Given a required rate of return of 12% and that the share price after 3 years is expected to be \$58.30, the value of the stock today is *closest to*:

    A. \$49

    B. \$48

    C. \$47

16. James is evaluating whether or not to invest in Gamma Corporation's stock. He gathered the following information regarding the company:

    Current market share price = \$60.58

    Cost of equity = 14.4%

Dividend growth rate = 10.5%

Given that the company's current dividend amounts to $2.35 per share, which of the following statements is *most accurate*?

A. James should not invest in the company's stock as it is overvalued.

B. James should invest in the company's stock as it is undervalued.

C. James should not invest in the company's stock as it is undervalued.

17. Jason concludes that Violet Company's shares are accurately priced at their current market value of $55. Given that the company's current dividend of $4.80 is expected to grow at 10% forever, the required rate of return is *closest to*:

A. 19.6%

B. 8.73%

C. 18.73%

18. MT Technologies recently acquired a patent for the new software it just developed and its profits are expected to grow at a rapid rate. The company's current dividend of $2.90 is expected to grow at a rate of 18% for the first 3 years, 10% for the next 2 years, and a constant growth rate of 7% thereafter. Given the cost of equity of 11%, the value of the stock today is *closest to*:

A. $108.24

B. $111.54

C. $107.42

19. Jupiter Inc.'s shares are currently being traded at their intrinsic value of $105 each. The company is expected to pay a dividend of $3.20 next year, which is expected to grow at a constant rate forever. Given a required rate of return of 13%, the growth rate in dividends is *closest to*:

A. 10%

B. 9%

C. 25%

20. JB Associates is experiencing a period of rapid growth rate. The company's current dividend of \$1.40 is expected to grow at a rate of 20% for the first 4 years, 15% for the next 2 years, and a constant growth rate of 6% thereafter. Given the cost of equity of 10%, the value of the stock today is *closest to*:

   A. \$71.52

   B. \$68.66

   C. \$65.76

21. Moon Traders is a start-up company and is not expected to pay any dividends for 4 years. Beginning in Year 5, earnings are expected to stabilize and grow at a sustainable rate of 6% indefinitely and the firm is expected to pay out 40% of its earnings in dividends. Analysts estimate that the firm's earnings in Year 5 are going to be \$2.95 per share. Given a required rate of return of 11%, the value of the stock today is *closest to*:

   A. \$23.60

   B. \$14.00

   C. \$15.55

22. Consider the following statements:

   Statement 1: A decrease in the dividend payout ratio will always lead to a decrease in a firm's P/E ratio.

   Statement 2: An increase in the required rate of return will always lead to a decrease in the firm's P/E ratio.

   Which of the following is *most likely*?

   A. Statement 1 is incorrect.

   B. Statement 2 is incorrect.

   C. Both statements are correct.

23. Which of the following is *most likely* an advantage of the P/E ratio?

   A. It is useful in valuing a company that is expected to go out of business.

   B. Reported earnings are typically more stable over time compared to book value.

C. It is simple to calculate and widely used in the industry.

24. Which of the following is *least likely* a disadvantage of P/BV ratio?

A. Accounting differences can impair the comparability of P/BV ratios across companies.

B. It is not useful for companies that have significant holdings of liquid assets.

C. Book values ignore nonphysical assets such as the quality of a company's human capital.

25. Which of the following ratios is *most likely* to be used to compare two companies using different accounting methods that have just started their operations and are expected to experience losses for the first 2 years?

A. Price-to-earnings ratio

B. Price-to-cash flow ratio

C. Price-to-book-value ratio

26. Asset-based valuation is *most* appropriate for companies that:

A. Have a higher proportion of current assets and liabilities.

B. Have assets and liabilities whose market values differ significantly from their carrying values.

C. Have an insignificant amount of intangible assets.

27. How is a stock's valuation viewed when its price is higher than its intrinsic or fundamental value?

A. Overvalued

B. Fairly valued

C. Undervalued

28. Which of the following statements regarding the estimation of intrinsic value is true?

A. There are universally accepted methods to calculate intrinsic value.

B. The methods of analysis include only objective factors.

C. The methods of analysis are not straightforward.

29. Which stock valuation method would be most appropriate for a company that is expected to pay a high and growing rate of dividends to its shareholders?

A. Dividend discount model

B. Gordon growth model

C. Multistage dividend discount model

Reading 50: Equity Valuation: Concepts and Basic Tools

1. An estimate of common share value can be obtained indirectly from enterprise value by:

   A. Adding cash and short-term investments to it.

   B. Subtracting liabilities and preferred dividends from it and adding cash and short-term investments to it.

   C. Subtracting cash and short-term investments from it.

   Answer: B

   An estimate of common share value can be obtained indirectly from enterprise value by subtracting liabilities and preferred shares from it and adding cash and short-term investments to it.

2. To arrive at the same intrinsic value estimate for a security, two investors should *least likely* have the same:

   A. Holding periods.

   B. Required rates of return.

   C. Growth expectations.

   Answer: A

   The intrinsic value of a security is independent of the investor's holding period.

3. Alpha Ltd. just paid a dividend of $4.20 per share, which is expected to grow at a rate of 15%. An analyst expects the price of the stock after one year to be $38.50. Given a required return on equity of 14%, the value of the company's stock today is *closest to*:

   A. $37

   B. $36

   C. $38

   Answer: C

$D_1 = 4.2\ (1 + 0.15) = \$4.83$

Value of the stock today = (4.83 / 1.14) + (38.5 / 1.14) = $38.01

4. An analyst gathered the following information regarding Global Traders:

   Current dividend per share = $3.80

   Expected growth rate = 12%

   Required return on equity = 8.6%

   The analyst expects the price of the stock after 2 years to be $43.20. The value of the company's stock today is *closest to*:

   A. $42.34

   B. $44.59

   C. $46.67

   Answer: B

   $D_1 = 3.8\ (1 + 0.12) = \$4.256$

   $D_2 = 4.256\ (1 + 0.12) = \$4.767$

   Value of the stock today = $(4.26 / 1.086) + (4.77 / 1.086^2) + (43.2 / 1.086^2) = \$44.59$

5. Federova's broker tells her that Cool Water Inc. is expected to pay a dividend of $3.20 per share for the foreseeable future. She purchases 100 shares of the company, which are currently being traded at $32 per share. Given a required rate of return of 11%, the intrinsic value of the stock is *closest to*:

   A. $29

   B. $32

   C. $24

   Answer: A

   Intrinsic value of the stock = 3.2 / 0.11 = $29.09

6. A retraction option on a preferred stock will *most likely*:

A. Increase the value of the preferred stock.

B. Decrease the value of the preferred stock.

C. Have no effect on the value of the preferred stock.

Answer: A

A retraction option is essentially a put option that enables the holder of a preferred stock to sell it back to the issuer before maturity at a predetermined price. This option is valuable to the investor and hence, increases the value of the preferred stock.

7. Which of the following will *least likely* increase the intrinsic value of a stock using the infinite period DDM?

   A. An increase in next year's dividend payment.

   B. A decreasing in the growth rate of dividends.

   C. A decreasing in the required rate of return.

   Answer: B

   Decreasing the growth rate of dividends will increase the difference between the required rate of return and the dividend growth rate. The will cause the intrinsic value to fall.

8. An analyst gathered the following information regarding Dolphin Inc.:

   Risk-free rate of return = 6%

   Required rate of return = 15%

   Given that the company is expected to pay a dividend of $2.80 which is expected to grow at 14% forever, the value of the stock today is *closest to*:

   A. $280

   B. $319

   C. $311

   Answer: A

   D_1 = $2.8

   Value of the stock today = 2.80 / (0.15 – 0.14) = $280

9. Allison is evaluating the following investment options:

Option A: Invest in Alpha Corp.'s shares which are currently trading at \$27 per share. The company's current dividend of \$3.20 is expected to continue forever.

Option B: Invest in Beta Corp.'s shares which are currently trading at \$41 per share. The company's current dividend of \$2.40 is expected to grow at 8% and the expected price of the company's shares at the end of one year is expected to be \$42 per share.

Given her required rate of return of 11%, she should *most likely* invest in:

A. Alpha Corp.'s shares only

B. Beta Corp.'s shares only

C. Both companies' shares

Answer: A

Option A:

Intrinsic value of the stock = 3.2 / 0.11 = \$29.091

The intrinsic value (\$29.091) is more than its current market price (\$27) therefore Allison should invest in Alpha Corp.

Option B:

D_1 = 2.4 (1 + 0.08) = \$2.592

Intrinsic value of the stock = (2.592 / 1.11) + (42 / 1.11) = \$40.173

The intrinsic value (\$40.173) is less than its current market value (\$41) therefore Allison should not invest in Beta Corp.

10. Elena is interested in buying Indigo Company's shares which are trading at \$23 each. She heard that the company's current dividend of \$2.80 is expected to continue for the foreseeable future. Given that the current market price of the shares exceed their intrinsic value by \$4, the required rate of return is *closest to*:

A. 12.17%

B. 14.74%

C. 10.37%

Answer: B

Intrinsic value of the stock = 23 – 4 = $19

Required rate of return = 2.8 / 19 = 0.1474 or 14.74%

11. Which of the following is *most likely* an assumption of the infinite period DDM?

    A. The dividend growth rate must be greater than the required rate of return.

    B. The dividend growth rate must be constant.

    C. The risk-free rate is greater than the dividend growth rate.

    Answer: B

    For the infinite period DDM model to work, the following assumptions must hold:

    - Dividends grow at a constant growth rate.
    - Required rate of return must be greater than the dividend growth rate.

12. If the intrinsic value of a stock is less than its current market price, an analyst should *most likely*:

    A. Buy the stock because the expected return is higher than the required return for the stock given its beta.

    B. Sell the stock because the expected return is lower than the required return for the stock given its beta.

    C. Buy the stock because the expected return is lower than the required return for the stock given its beta.

    Answer: B

    If the intrinsic value of the stock is less than its current market price, an analyst should sell the stock because the expected return is lower than the required return for the stock given its beta.

13. An analyst gathered the following information regarding Venus Inc.:

    Current market share price = $6.25

Dividend payout ratio = 0.4

Cost of equity = 12%

Given that dividends are expected to grow at a rate of 7% indefinitely, the company's P/E ratio is *closest to*:

A. 8

B. 125

C. 52

Answer: A

P/E = 0.4 / (0.12 – 0.07) = 8

14. Which of the following models is *most likely* used to value a "supernormal growth" company?

    A. Infinite period DDM

    B. DDM for multiple holding periods

    C. Multi-stage DDM

    Answer: C

    The correct valuation model to value "supernormal growth" companies is the multi-stage dividend discount model.

15. Blue Rose Inc. currently pays a dividend of $2.40 per share, which is expected to grow at a rate of 13%. Given a required rate of return of 12% and that the share price after 3 years is expected to be $58.30, the value of the stock today is *closest to*:

    A. $49

    B. $48

    C. $47

    Answer: A

    D_1 = 2.4 (1 + 0.13) = $2.712

    PV (D_1) = 2.712 / 1.12 = $2.421

    D_2 = 2.712 (1 + 0.13) = $3.065

$PV(D_2) = 3.065 / (1.12)^2 = \$2.443$

$D_3 = 3.065 (1 + 0.13) = \$3.463$

$PV(D_3) = 3.463 / (1.12)^3 = \$2.465$

$PV(P_3) = 58.3 / (1.12)^3 = \$41.497$

Therefore, value of the stock today = 2.421 + 2.443 + 2.465 + 41.497 = $48.826

16. James is evaluating whether or not to invest in Gamma Corporation's stock. He gathered the following information regarding the company:

    Current market share price = $60.58

    Cost of equity = 14.4%

    Dividend growth rate = 10.5%

    Given that the company's current dividend amounts to $2.35 per share, which of the following statements is *most accurate*?

    A. James should not invest in the company's stock as it is overvalued.

    B. James should invest in the company's stock as it is undervalued.

    C. James should not invest in the company's stock as it is undervalued.

    Answer: B

    $D_1 = 2.35 \times 1.105 = \$2.59675$

    Intrinsic value = $2.59675 / (0.144 - 0.105) = \$66.58$

17. Jason concludes that Violet Company's shares are accurately priced at their current market value of $55. Given that the company's current dividend of $4.80 is expected to grow at 10% forever, the required rate of return is *closest to*:

    A. 19.6%

    B. 8.73%

    C. 18.73%

    Answer: A

$D_1 = 4.8\ (1 + 0.1) = \$5.28$

Required rate of return = $(5.28 / 55) + 0.1 = 0.196$ or 19.6%

18. MT Technologies recently acquired a patent for the new software it just developed and its profits are expected to grow at a rapid rate. The company's current dividend of $2.9 is expected to grow at a rate of 18% for the first 3 years, 10% for the next 2 years, and a constant growth rate of 7% thereafter. Given the cost of equity of 11%, the value of the stock today is *closest to*:

    A. $108.24

    B. $111.54

    C. $107.42

    Answer: A

    $D_1 = 2.9\ (1.18) = \$3.422$

    $PV\ (D_1) = 3.422 / 1.11 = \$3.083$

    $D_2 = 3.422\ (1.18) = \$4.038$

    $PV\ (D_2) = 4.038 / (1.11)^2 = \$3.277$

    $D_3 = 4.038\ (1.18) = \$4.765$

    $PV\ (D_3) = 4.765 / (1.11)^3 = \$3.484$

    $D_4 = 4.765\ (1.1) = \$5.241$

    $PV\ (D_4) = 5.241 / (1.11)^4 = \$3.453$

    $D_5 = 5.241\ (1.1) = \$5.765$

    $PV\ (D_5) = 5.765 / (1.11)^5 = \$3.421$

    $D_6 = 5.765\ (1.07) = \$6.169$

    $P_5 = 6.169 / (0.11 - 0.07) = \$154.22$

    $PV\ (P_5) = 154.22 / (1.11)^5 = \$91.525$

    Value of the stock = $3.083 + 3.277 + 3.484 + 3.453 + 3.421 + 91.525 =$

$108.243

19. Jupiter Inc.'s shares are currently being traded at their intrinsic value of $105 each. The company is expected to pay a dividend of $3.20 next year, which is expected to grow at a constant rate forever. Given a required rate of return of 13%, the growth rate in dividends is *closest to*:

    A. 10%

    B. 9%

    C. 25%

    Answer: A

    Using the infinite period DDM:

    Growth rate in dividends = 0.13 – (3.2 / 105) = 9.95%

20. JB Associates is experiencing a period of rapid growth rate. The company's current dividend of $1.40 is expected to grow at a rate of 20% for the first 4 years, 15% for the next 2 years, and a constant growth rate of 6% thereafter. Given the cost of equity of 10%, the value of the stock today is *closest to*:

    A. $71.52

    B. $68.66

    C. $65.76

    Answer: B

    $D_1 = 1.4 (1.2) = \$1.68$

    $PV (D_1) = 1.68 / 1.1 = \$1.5273$

    $D_2 = 1.68 (1.2) = \$2.016$

    $PV (D_2) = 2.016 / (1.1)^2 = \$1.666$

    $D_3 = 2.016 (1.2) = \$2.4192$

    $PV (D_3) = 2.4192 / (1.1)^3 = \$1.8176$

    $D_4 = 2.4192 (1.2) = \$2.903$

$PV(D_4) = 2.903 / (1.1)^4 = \$1.9828$

$D_5 = 2.903\ (1.15) = \$3.3385$

$PV(D_5) = 3.3385 / (1.1)^5 = \$2.0729$

$D_6 = 3.3385\ (1.15) = \$3.8393$

$PV(D_6) = 3.8393 / (1.1)^6 = \$2.1672$

$D_7 = 3.8393\ (1.06) = \$4.0696$

$P_6 = 4.0696 / (0.1 - 0.06) = \$101.7407$

$PV(P_6) = 101.7407 / (1.1)^6 = \$57.43$

Value of the stock = 1.5273 + 1.666 + 1.8176 + 1.9828 + 2.0729 + 2.1672 + 57.43

Value of the stock = \$68.6638

21. Moon Traders is a start-up company and is not expected to pay any dividends for 4 years. Beginning in Year 5, earnings are expected to stabilize and grow at a sustainable rate of 6% indefinitely and the firm is expected to pay out 40% of its earnings in dividends. Analysts estimate that the firm's earnings in Year 5 are going to be \$2.95 per share. Given a required rate of return of 11%, the value of the stock today is *closest to*:

A. \$23.60

B. \$14.00

C. \$15.55

Answer: C

$D_5 = 2.95 \times 0.4 = \$1.18$

$P_4 = 1.18 / (0.11 - 0.06) = \$23.6$

$PV(P_4) = 23.6 / (1.11)^4 = \$15.546$

22. Consider the following statements:

Statement 1: A decrease in the dividend payout ratio will always lead to a decrease in a firm's P/E ratio.

Statement 2: An increase in the required rate of return will always lead to a decrease in the firm's P/E ratio.

Which of the following is *most likely*?

A. Statement 1 is incorrect.

B. Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

While a decrease in the payout ratio will decrease the firm's P/E ratio, the decrease could be offset by an increase in the firm's growth rate as a result of the higher retention ratio. Therefore, the value of the firm can increase or decrease in response to a change in the dividend payout ratio.

23. Which of the following is *most likely* an advantage of the P/E ratio?

A. It is useful in valuing a company that is expected to go out of business.

B. Reported earnings are typically more stable over time compared to book value.

C. It is simple to calculate and widely used in the industry.

Answer: C

P/BV ratio is useful in valuing a company that is expected to go out of business.

Book value is typically more stable over time compared to reported earnings.

24. Which of the following is *least likely* a disadvantage of P/BV ratio?

A. Accounting differences can impair the comparability of P/BV ratios across companies.

B. It is not useful for companies that have significant holdings of liquid assets.

C. Book values ignore nonphysical assets such as the quality of a company's human capital.

Answer: B

P/BV ratio is useful in valuing companies that have significant holdings of liquid assets.

25. Which of the following ratios is *most likely* to be used to compare two companies using different accounting methods that have just started their operations and are expected to experience losses for the first 2 years?

    A. Price-to-earnings ratio

    B. Price-to-cash flow ratio

    C. Price-to-book-value ratio

    Answer: B

    Companies that make losses have negative P/E ratios. Negative P/E ratios are useless as far as relative valuation is concerned.

    Accounting differences can impair the comparability of P/BV ratios across companies.

    Price to cash flow is more stable than the P/E ratio. Using this ratio gets around the problems related to differences in accounting methods used by companies.

26. Asset-based valuation is *most* appropriate for companies that:

    A. Have a higher proportion of current assets and liabilities.

    B. Have assets and liabilities whose market values differ significantly from their carrying values.

    C. Have an insignificant amount of intangible assets.

    Answer: C

    Asset-based valuation is not appropriate for companies that have a significant amount of intangible assets.

27. How is a stock's valuation viewed when its price is higher than its intrinsic or fundamental value?

    A. Overvalued

B. Fairly valued

C. Undervalued

Answer: A

If a stock price is higher than its intrinsic value, this implies it is overvalued relative to its fundamental valuation.

28. Which of the following statements regarding the estimation of intrinsic value is true?

A. There are universally accepted methods to calculate intrinsic value.

B. The methods of analysis include only objective factors.

C. The methods of analysis are not straightforward.

Answer: C

This type of analysis is not very straightforward because the estimation of intrinsic value requires numerous subjective factors.

29. Which stock valuation method would be most appropriate for a company that is expected to pay a high and growing rate of dividends to its shareholders?

A. Dividend discount model

B. Gordon growth model

C. Multistage dividend discount model

Answer: B

A multistage dividend discount model is best used for firms with abnormal levels of dividend payouts. The dividend discount model is generally ineffective in valuing equities with high and growing levels of dividends and can even be rendered useless if dividends grow faster than the discount rate.

Fixed Income

Reading 51: Fixed-Income Securities: Defining Elements

1. A supranational bond that matures in 5 years will *most likely* be known as a:

   A. Money market security.

   B. Capital market security.

   C. Zero coupon bond.

2. Which of the following is *least likely*?

   A. A $1,000 par semiannual-pay bond carrying a coupon rate of 8% will pay the investor $40 every 6 months.

   B. The bond indenture is held by a trustee, who is appointed by bondholders and owes a fiduciary duty to bondholders.

   C. In a securitization, the loans made by the originator are assets of the SPV, while bonds issued by the SPE represent its liabilities.

3. Consider the following statements:

   Statement 1: Sovereign bonds issued in foreign currency are usually considered safer than sovereign bonds issued in local currency.

   Statement 2: All other things remaining the same, securitized bonds carry lower yields than covered bonds.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

4. Which of the following types of bonds is *least likely* to be guaranteed by a national government?

   A. Supranational bonds

   B. Sovereign bonds

C. Non-sovereign bonds

5. Which of the following types of bonds, if issued in the U.S., *most likely* carries the highest credit risk?

   A. Senior secured debt

   B. Junior secured debt

   C. Debentures

6. Which of the following is *least likely* an example of internal credit enhancement?

   A. Subordination

   B. Overcollateralization

   C. Surety bonds

7. Which of the following is *most likely* used to mitigate third party credit risk entailed by external credit enhancement?

   A. Turboing

   B. Setting up a penal sum

   C. Setting up a cash collateral account

8. Which of the following is *least likely* a positive covenant?

   A. Make timely payments to bondholders

   B. Negative pledges

   C. Pay taxes

9. Which of the following is *least likely* a negative covenant?

   A. Insure and maintain assets

   B. Restrictions on distributions to shareholders

   C. Restrictions on mergers and acquisitions

10. Which of the following types of bonds *most likely* enables bondholders to choose the currency in which they receive each interest payment and principal repayment?

    A. Global bond

B. Dual-currency bond

C. Currency option bond

11. A bond issued by Hyundai in South Korea, denominated in USD, and sold in the U.S. is *most likely* a:

    A. Domestic bond.

    B. Global bond.

    C. Foreign bond.

12. A bond issued by Samsung in Korea, denominated in USD, but not registered with the SEC, and sold to an institutional investor in Africa is *most likely* an example of:

    A. Global bond.

    B. Foreign bond.

    C. Eurobond.

13. A company issues an 8-year zero-coupon bond with a par value of $1,000 for $840. Assuming that an original issue discount tax provision applies in this case, an investor who purchases this bond and holds it until maturity *most likely*:

    A. Must include $20 in his taxable income each year for eight years and pay a capital gains tax on $160 at maturity.

    B. Must include $20 in his taxable income each year for eight years and does not need to pay any capital gains taxes at maturity.

    C. Does not have to include $20 in taxable income each year for eight years, but must pay capital gains taxes on $160 at maturity.

14. Which of the following bonds is *least likely* to offer investors protection against a rise in market interest rates?

    A. Step-up bonds

    B. Variable-rate notes

    C. Inverse floaters

15. Which of the following bonds are *most likely* to be issued as bearer bonds?

A. Eurobonds

B. Domestic bonds

C. Foreign bonds

16. From the perspective of the investor, an advantage of a sinking fund provision is *most likely* a reduction in:

    A. Reinvestment risk.

    B. Call risk.

    C. Credit risk.

17. Credit-linked coupon bonds *most likely* offer investors protection against:

    A. A decline in the issuer's creditworthiness only.

    B. A decline in economic conditions only.

    C. A decline in the issuer's creditworthiness and a decline in economic conditions.

18. Which of the following bonds are *most likely* amortizing bonds?

    A. Interest-indexed bonds

    B. Capital-indexed bonds

    C. Indexed-annuity bonds

19. Which of the following is *most likely* to place restrictions on an issuer's activities?

    A. Affirmative covenant

    B. Negative covenant

    C. A bond's indenture

20. A semiannual-pay coupon bond carries a par value of $3,000. It's quoted price equals 97.5 and it carries a 10% coupon rate. The current market value of the bond and the value of each coupon is *closest to:*

	Market Value	**Coupon Payment**
A.	$2,925	$150

B.	$975	$300
C.	$2,925	$300

21. A floating-rate bond with a par value of $1,000 makes quarterly coupon payments based on LIBOR-90 plus a quoted margin of 100 basis points. LIBOR-90 on July 1 was 4%, but today (Oct 1) it stands at 4.5%. The coupon amount that will be paid on this bond today is *closest to:*

    A. $50

    B. $55

    C. $12.50

22. Consider the following coupon structure:

    Year 1: 5%

    Year 2: 5.25%

    Year 3: 5.5%

    This coupon structure is *most likely* an example of:

    A. Inflation-adjusted security.

    B. Step-up note.

    C. Inverse floater.

23. The term to maturity of a bond *least likely* plays a role in determining its:

    A. Price volatility.

    B. Coupon rate.

    C. Yield to maturity.

24. Which of the following is *least likely* an option that favors the investor in a security?

    A. Conversion option

    B. Put provision

    C. Doubling option

25. Which of the following bonds *most likely* accrue interest over a portion of their term, and make periodic coupon payments for the rest of their term?

   A. Step-up notes

   B. Deferred coupon bonds

   C. Zero coupon bonds

26. For a floating-rate security that resets its coupon every 3 months, LIBOR-90 on July 1, 2008 is used to determine the coupon payment that will *most likely* be made at:

   A. October 1, 2008.

   B. July 1, 2008.

   C. April 1, 2008.

27. An issuer must make semiannual payments at the rate of LIBOR-180 plus a quoted margin of 200 basis points on bonds worth $1,000 par. Calculate the coupon payment that will be made on Jan 1, 2009 given the following information:

July 1, 2008	LIBOR-180 = 5%
Jan 1, 2009	LIBOR-180 = 6%

   A. $35

   B. $70

   C. $80

28. If an investor is holding a bond he or she believes is likely to fall in value, which of the following types of bonds would best serve the investor's purposes?

   A. Callable bond

   B. Putable bond

   C. Convertible bond

29. The PAR value of a bond is $1200, the conversion price is $50, and the current price of the equity is $100. What is the conversion value of the bond?

A. \$1350

B. \$1200

C. \$2400

30. A convertible bond has a PAR value of \$1100, the conversion value is \$1000, and the conversion price is \$50. What is the value of the conversion premium?

A. \$50

B. \$100

C. \$150

Reading 51: Fixed-Income Securities: Defining Elements

1. A supranational bond that matures in 5 years will *most likely* be known as a:

   A. Money market security.

   B. Capital market security.

   C. Zero coupon bond.

   Answer: B

   Fixed income securities which, at the time of issuance, have more than one year to maturity are known as capital market bonds.

   Money market bonds are those that are issued with a term to maturity of one year or less.

   Zero coupon bonds are pure discount bonds that do not offer any coupon payments. The question is silent on the bond's coupon structure.

2. Which of the following is *least likely*?

   A. A $1,000 par semiannual-pay bond carrying a coupon rate of 8% will pay the investor $40 every 6 months.

   B. The bond indenture is held by a trustee, who is appointed by bondholders and owes a fiduciary duty to bondholders.

   C. In a securitization, the loans made by the originator are assets of the SPV, while bonds issued by the SPE represent its liabilities.

   Answer: B

   The trustee is appointed by the issuer, but owes a fiduciary duty to bond holders.

   The coupon rate is stated in terms of an annualized rate. A semiannual-pay bond would make a payment of [(coupon rate / 2) × par value] every 6 months.

In a securitization, the SPE's assets are the loans that it has bought from the sponsor/originator, and its liabilities are the bonds it has sold to investors.

3. Consider the following statements:

   Statement 1: Sovereign bonds issued in foreign currency are usually considered safer than sovereign bonds issued in local currency.

   Statement 2: All other things remaining the same, securitized bonds carry lower yields than covered bonds.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: C

   Sovereign bonds issued in foreign currency are usually **more** risky than those issued in local currency. Sovereigns can print local currency to repay local currency bonds but printing money does not work for foreign currency bonds (as it results in local currency depreciation). Securitized bonds are more risky and therefore carry higher yields than covered bonds. Covered bonds offer investors recourse to both (1) the cover pool and (2) assets held by the sponsor. Further, non-performing assets in the cover pool must be replaced by the issuer.

4. Which of the following types of bonds is *least likely* to be guaranteed by a national government?

   A. Supranational bonds

   B. Sovereign bonds

   C. Non-sovereign bonds

   Answer: C

   Bonds issued by supranational organizations can be guaranteed by national governments in some cases. Sovereign bonds are backed by the "full faith and credit" of the issuing government. Non-sovereign bonds are not guaranteed by national governments.

5. Which of the following types of bonds, if issued in the U.S., *most likely* carries the highest credit risk?

   A. Senior secured debt

   B. Junior secured debt

   C. Debentures

   Answer: C

   Debentures issued in the U.S. are not secured so they entail higher credit risk than secured bonds.

6. Which of the following is *least likely* an example of internal credit enhancement?

   A. Subordination

   B. Overcollateralization

   C. Surety bonds

   Answer: C

   Surety bonds or bank guarantees are a type of external credit enhancement.

7. Which of the following is *most likely* used to mitigate third party credit risk entailed by external credit enhancement?

   A. Turboing

   B. Setting up a penal sum

   C. Setting up a cash collateral account

   Answer: C

   Turboing refers to the practice of depositing the excess spread (internal credit enhancement) into a reserve account to protect against future credit losses.

   The penal sum refers to the maximum amount that surety bonds or bank guarantees will pay out to cover investor losses.

   A cash collateral account is used to mitigate third-party credit risk entailed by external credit enhancement. The issuer borrows the credit enhancement amount and invests the sum in highly-rate securities.

Since cash is already in the hands of the issuer, a downgrade of the guarantor does not affect the rating of the bond issue.

8. Which of the following is *least likely* a positive covenant?

   A. Make timely payments to bondholders

   B. Negative pledges

   C. Pay taxes

   Answer: B

   Negative pledges are an examples of negative covenants. They prevent issuers from issuing bonds with a higher rank in the priority of claims than bonds held by existing shareholders.

9. Which of the following is *least likely* a negative covenant?

   A. Insure and maintain assets

   B. Restrictions on distributions to shareholders

   C. Restrictions on mergers and acquisitions

   Answer: A

   A requirement to insure and maintain assets is an example of a positive covenant.

10. Which of the following types of bonds *most likely* enables bondholders to choose the currency in which they receive each interest payment and principal repayment?

    A. Global bond

    B. Dual-currency bond

    C. Currency option bond

    Answer: C

    A currency option bond gives bondholders a choice regarding which currency they would like to receive each principal and interest payment in.

    A dual-currency bond makes coupon payments in one currency and the principal repayment in another currency.

Global bonds are simultaneously issued in the Eurobond market and at least one domestic market.

11. A bond issued by Hyundai in South Korea, denominated in USD, and sold in the U.S. is *most likely* a:

    A. Domestic bond.

    B. Global bond.

    C. Foreign bond.

    Answer: C

    This is an example of a foreign bond.

12. A bond issued by Samsung in Korea, denominated in USD, but not registered with the SEC, and sold to an institutional investor in Africa is *most likely* an example of:

    A. Global bond.

    B. Foreign bond.

    C. Eurobond.

    Answer: C

    A Eurobond is a bond that is issued internationally, outside the jurisdiction of any single country.

    The bond in question is not a global bond because a global bond must be issued simultaneously in the Eurobond market and in at least one domestic market. A foreign bond would have to be registered with the U.S. SEC.

13. A company issues an 8-year zero-coupon bond with a par value of $1,000 for $840. Assuming that an original issue discount tax provision applies in this case, an investor who purchases this bond and holds it until maturity *most likely*:

    A. Must include $20 in his taxable income each year for eight years and pay a capital gains tax on $160 at maturity.

    B. Must include $20 in his taxable income each year for eight years and does not need to pay any capital gains taxes at maturity.

    C. Does not have to include $20 in taxable income each year for eight years, but must pay capital gains taxes on $160 at maturity.

Answer: B

The original issue discount tax provision requires the investor to include a prorated portion of the original issue discount in her taxable income each year until maturity. Upon maturity, the investor faces no capital gain or loss.

14. Which of the following bonds is *least likely* to offer investors protection against a rise in market interest rates?

 A. Step-up bonds

 B. Variable-rate notes

 C. Inverse floaters

 Answer: C

 The coupon rate on an inverse floater declines with an increase in market interest rates. The coupon rate on step-up notes and variable-rate notes (a type of FRN) both offer protection against increases in market interest rates to the investor.

15. Which of the following bonds are *most likely* to be issued as bearer bonds?

 A. Eurobonds

 B. Domestic bonds

 C. Foreign bonds

 Answer: A

 Eurobonds are typically issued as bearer bonds, while domestic and foreign bonds are usually registered bonds.

16. From the perspective of the investor, an advantage of a sinking fund provision is *most likely* a reduction in:

 A. Reinvestment risk.

 B. Call risk.

 C. Credit risk.

 Answer: C

Since principal is received during the term of the bond as opposed to in one lump sum bullet payment at maturity, a sinking fund provision reduces credit risk faced by the investor.

17. Credit-linked coupon bonds *most likely* offer investors protection against:

    A. A decline in the issuer's creditworthiness only.

    B. A decline in economic conditions only.

    C. A decline in the issuer's creditworthiness and a decline in economic conditions.

    Answer: C

    Credit-linked coupon bonds offer protection against both a decline in the issuer's creditworthiness and a decline in economic conditions (as credit ratings tend to decline during recessions).

18. Which of the following bonds are *most likely* amortizing bonds?

    A. Interest-indexed bonds

    B. Capital-indexed bonds

    C. Indexed-annuity bonds

    Answer: C

    Interest-indexed and capital-indexed bonds are both non-amortizing bonds. Indexed-annuity bonds are fully amortized bonds where the annual payment (that consists of interest and principal) is linked to a specified index.

19. Which of the following is *most likely* to place restrictions on an issuer's activities?

    A. Affirmative covenant

    B. Negative covenant

    C. A bond's indenture

    Answer: B

    Negative covenants place restrictions on the borrower's activities.

20. A semiannual-pay coupon bond carries a par value of $3,000. It's

quoted price equals 97.5 and it carries a 10% coupon rate. The current market value of the bond and the value of each coupon is *closest to:*

	Market Value	**Coupon Payment**
A.	$2,925	$150
B.	$975	$300
C.	$2,925	$300

Answer: A

Market value = Quoted price/100 × Par value = $2,925

Semiannual coupon payment = Coupon rate/2 × Par value = $150

21. A floating-rate bond with a par value of $1,000 makes quarterly coupon payments based on LIBOR-90 plus a quoted margin of 100 basis points. LIBOR-90 on July 1 was 4%, but today (Oct 1) it stands at 4.5%. The coupon amount that will be paid on this bond today is *closest to:*

    A. $50

    B. $55

    C. $12.50

    Answer: C

    The coupon payment on any coupon payment date is based on the LIBOR rate at the beginning of the period (at the last reset date)

    Coupon for the quarter ended Oct 1 (today) = (0.04 + 0.01) × (90/360) × $1,000 = $12.50

22. Consider the following coupon structure:

    Year 1: 5%

    Year 2: 5.25%

    Year 3: 5.5%

    This coupon structure is *most likely* an example of:

    A. Inflation-adjusted security.

    B. Step-up note.

C. Inverse floater.

Answer: B

An inflation-adjusted security's coupon rate is dependent on the CPI from period to period. The effective coupon rates are not known at issuance.

An inverse floater's coupon rate varies inversely with a reference rate. The effective coupon rates are not known at issuance.

Periodic coupon rates gradually rise for a step-up note.

23. The term to maturity of a bond *least likely* plays a role in determining its:

A. Price volatility.

B. Coupon rate.

C. Yield to maturity.

Answer: B

The term to maturity of a bond has no impact on the coupon rate specified in the bond indenture.

24. Which of the following is *least likely* an option that favors the investor in a security?

A. Conversion option

B. Put provision

C. Doubling option

Answer: C

A doubling option in a sinking fund provision gives the issuer the option to purchase double the required number of bonds.

25. Which of the following bonds *most likely* accrue interest over a portion of their term, and make periodic coupon payments for the rest of their term?

A. Step-up notes

B. Deferred coupon bonds

C. Zero coupon bonds

Answer: B

Deferred coupon bonds accrue interest over a portion of their term, and make periodic coupon payments for the rest of their term.

26. For a floating-rate security that resets its coupon every 3 months, LIBOR-90 on July 1, 2008 is used to determine the coupon payment that will *most likely* be made at:

A. October 1, 2008.

B. July 1, 2008.

C. April 1, 2008.

Answer: A

LIBOR-90 on July 1, 2008 will determine the interest payments that will be made at the next reset date i.e. Oct 1, 2008.

27. An issuer must make semiannual payments at the rate of LIBOR-180 plus a quoted margin of 200 basis points on bonds worth $1,000 par. Calculate the coupon payment that will be made on Jan 1, 2009 given the following information:

July 1, 2008	LIBOR-180 = 5%
Jan 1, 2009	LIBOR-180 = 6%

A. $35

B. $70

C. $80

Answer: A

The coupon payment on January 1, 2009 will be based on LIBOR-180 at July 1, 2008. Therefore, the interest payment will be calculated as:

$(5\% + 2\%) \times 180/360 \times \$1{,}000 = \$35$

28. If an investor is holding a bond he or she believes is likely to fall in value, which of the following types of bonds would best serve the investor's purposes?

A. Callable bond

B. Putable bond

C. Convertible bond

Answer: B

Only a putable bond would work in this situation, as it allows the bondholders to "put" the bond back to the company if prices fall too much. A callable bond only serves to benefit the issuer and a convertible bond would be useful only if the price of the company's stock were expected to rise.

29. The PAR value of a bond is $1200, the conversion price is $50, and the current price of the equity is $100. What is the conversion value of the bond?

A. $1350

B. $1200

C. $2400

Answer: C

In this example, the conversion ratio of the bond is 24 (1200/50) and the current price of the stock is $100. So the answer is the conversion ratio multiplied by the price of the stock ($2400).

30. A convertible bond has a PAR value of $1100, the conversion value is $1000, and the conversion price is $50. What is the value of the conversion premium?

A. $50

B. $100

C. $150

Answer: B

The conversion premium equals the difference between the convertible bond's price and the conversion value ($100).

Reading 52: Fixed-Income Markets: Issuance, Trading, and Funding

1. Consider the following statements:

   Statement 1: Generally speaking, emerging market bonds offer lower yields than developed market bonds.

   Statement 2: Generally speaking, coupon rates on tax-exempt bonds are lower than those on otherwise identical taxable bonds.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

2. Consider the following statements:

   Statement 1: Generally speaking, non-sovereign bonds offer higher yields than sovereign bonds.

   Statement 2: Generally speaking, more seasoned sovereign issues tend to trade less frequently.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

3. Which of the following is *least likely* regarding quasi-government bonds?

   A. They may be guaranteed by the national government.

   B. They may be backed by collateral.

   C. They are generally serviced through the issuer's tax receipts.

4. Which of the following is *least likely* regarding commercial paper?

A. Commercial paper is unsecured.

B. Commercial paper tends to have short maturity and is generally rolled over by issuers.

C. The secondary market for commercial paper is very active.

5. Which of the following is *least likely* regarding medium-term notes?

A. They tend to have terms to maturity ranging from 5 to 12 years.

B. They are offered continuously by agents of the issuer.

C. Their customized features can result in limited liquidity.

6. Consider the following statements:

Statement 1: Both counterparties in a repurchase agreement face counterparty credit risk.

Statement 2: A negotiable CD provides the depositor with the option to sell the CD in the open market.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

7. Issuers of which of the following types of corporate bonds are *most likely* to maintain access to backup lines of credit?

A. MTNs

B. Commercial paper

C. Syndicated loans

8. Bank loans are *most likely* to be the primary source of debt financing for:

A. Highly-rated companies.

B. Small and medium-size companies.

C. Large companies.

9. Which of the following is *least likely* a reason for the historically low default rates on commercial paper?

A. Investors have a chance to reassess the issuer's financial position each time the issuer tries to roll over maturing paper.

B. Corporate managers are wary of losing access to the commercial paper market going forward.

C. Commercial paper is secured by back-up lines of credit.

10. Consider the following statements:

Statement 1: A liquid secondary market is one that enables investors to sell bonds at a price close to their purchase price.

Statement 2: Privately-placed bonds tend to be relatively illiquid.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

11. Bonds that are privately placed are *most likely* to:

A. Have more customized and restrictive covenants than bonds issued to the public.

B. Be registered.

C. Be underwritten by an investment bank.

12. In which of the following markets are orders *most likely* matched and executed through a communications network?

A. The grey market

B. The OTC market

C. An organized exchange

13. Consider the following statements:

Statement 1: The interbank market is a market where banks can borrow secured funds from each other.

Statement 2: The central bank funds market is the market where banks can borrow reserves from each other.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

14. Which of the following is *least likely* regarding CDs?

    A. A non-negotiable CD imposes an early withdrawal penalty on the investor.

    B. CDs are available in the domestic market only.

    C. Large CDs are an important source of funding for banks.

15. Which of the following groups of investors is *least likely* to invest directly in fixed-income securities?

    A. Anchor buyers

    B. Central banks

    C. Retail investors

16. Consider the following statements:

    Statement 1: Shelf registrations are subject to a higher level of scrutiny than standard public offerings.

    Statement 2: Collateral that is "on special" carries a lower repo rate than "general collateral."

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

17. Bonds issued by GSEs are *most likely* classified as:

    A. Corporate bonds.

    B. Non-sovereign bonds.

    C. Quasi-government bonds.

18. Which of the following is *least likely* regarding MTNs?

    A. MTNs offer lower yields than otherwise-identical publicly-issued bonds.

B. MTNs are continuously offered to investors by the agent of the issuer.

C. MTNs can be customized to meet investor requirements, which may result in limited liquidity.

Reading 52: Fixed-Income Markets: Issuance, Trading, and Funding

1. Consider the following statements:

   Statement 1: Generally speaking, emerging market bonds offer lower yields than developed market bonds.

   Statement 2: Generally speaking, coupon rates on tax-exempt bonds are lower than those on otherwise identical taxable bonds.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: B

   Generally speaking, emerging market bonds offer higher yields than developed market bonds as they entail greater risk.

   Statement 2 is correct.

2. Consider the following statements:

   Statement 1: Generally speaking, non-sovereign bonds offer higher yields than sovereign bonds.

   Statement 2: Generally speaking, more seasoned sovereign issues tend to trade less frequently.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: C

   Both statements are indeed correct.

Non-sovereign bonds are of lower credit quality than sovereign bonds so they offer higher yields. Most secondary market trading of sovereign bonds is in on-the-run securities. As an issue ages, it trades less frequently.

3. Which of the following is *least likely* regarding quasi-government bonds?

   A. They may be guaranteed by the national government.

   B. They may be backed by collateral.

   C. They are generally serviced through the issuer's tax receipts.

   Answer: C

   Generally speaking, quasi-government entities do not have direct taxing power so bonds are serviced with cash flows generated by the entity from the project being financed by the issue. In some cases, quasi-government bonds may be backed by collateral.

4. Which of the following is *least likely* regarding commercial paper?

   A. Commercial paper is unsecured.

   B. Commercial paper tends to have short maturity and is generally rolled over by issuers.

   C. The secondary market for commercial paper is very active.

   Answer: C

   Investors tend to hold on to commercial paper until maturity, so there is very little secondary market trading in these instruments.

5. Which of the following is *least likely* regarding medium-term notes?

   A. They tend to have terms to maturity ranging from 5 to 12 years.

   B. They are offered continuously by agents of the issuer.

   C. Their customized features can result in limited liquidity.

   Answer: A

   MTNs are not necessarily intermediate-term securities (which are defined as securities with maturities ranging from 5-12 years).

6. Consider the following statements:

Statement 1: Both counterparties in a repurchase agreement face counterparty credit risk.

Statement 2: A negotiable CD provides the depositor with the option to sell the CD in the open market.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

7. Issuers of which of the following types of corporate bonds are *most* likely to maintain access to backup lines of credit?

   A. MTNs

   B. Commercial paper

   C. Syndicated loans

   Answer: B

   Issuers of commercial paper often maintain access to backup lines of credit to safeguard against rollover risk (the risk that the company will not be able to issuer new commercial paper to replace maturing paper).

8. Bank loans are *most likely* to be the primary source of debt financing for:

   A. Highly-rated companies.

   B. Small and medium-size companies.

   C. Large companies.

   Answer: B

   Bank loans are the primary source of debt financing for small and medium size companies. Larger and highly-rated companies find it more cost-effective to go to the capital markets and issue bonds to attain debt financing.

9. Which of the following is *least likely* a reason for the historically low default rates on commercial paper?

   A. Investors have a chance to reassess the issuer's financial position each time the issuer tries to roll over maturing paper.

   B. Corporate managers are wary of losing access to the commercial paper market going forward.

   C. Commercial paper is secured by back-up lines of credit.

   Answer: C

   Commercial paper is an unsecured debt instrument. Issuers maintain access to backup lines of credit to safeguard against rollover risk, not default risk.

10. Consider the following statements:

    Statement 1: A liquid secondary market is one that enables investors to sell bonds at a price close to their purchase price.

    Statement 2: Privately-placed bonds tend to be relatively illiquid.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

    Answer: A

    A liquid secondary market is one that enables investors to sell bonds at a price close to their fair market value.

    Bonds issued in a private placement are neither underwritten nor registered, and there is usually not secondary market to trade them.

11. Bonds that are privately placed are *most likely* to:

    A. Have more customized and restrictive covenants than bonds issued to the public.

    B. Be registered.

    C. Be underwritten by an investment bank.

Answer: A

Bonds that are privately places are neither underwritten nor registered.

Investors are usually able to influence the terms of the issue, so the bonds typically contain more customized and restrictive covenants than publicly issued bonds.

12. In which of the following markets are orders *most* likely matched and executed through a communications network?

    A. The grey market

    B. The OTC market

    C. An organized exchange

    Answer: B

    In an OTC market, traders submit their orders from various locations through electronic trading platforms. Orders are then matched and executed through a communications network.

13. Consider the following statements:

    Statement 1: The interbank market is a market where banks can borrow secured funds from each other.

    Statement 2: The central bank funds market is the market where banks can borrow reserves from each other.

    Which of the following is *most likely*?

    A. Only Statement 1 is incorrect.

    B. Only Statement 2 is incorrect.

    C. Both statements are correct.

    Answer: A

    The interbank market is a market where banks can borrow **unsecured** funds from each other.

    Statement 2 is indeed correct.

14. Which of the following is *least likely* regarding CDs?

A. A non-negotiable CD imposes an early withdrawal penalty on the investor.

B. CDs are available in the domestic market only.

C. Large CDs are an important source of funding for banks.

Answer: B

CDs are available in domestic bond markets and in the Eurobond market.

15. Which of the following groups of investors is *least likely* to invest directly in fixed-income securities?

A. Anchor buyers.

B. Central banks.

C. Retail investors.

Answer: C

Retail investors are tend to invest indirectly in fixed income securities through mutual funds and ETFs.

Anchor buyers (large institutional investors) and central banks tend to invest directly in the fixed income market.

16. Consider the following statements:

Statement 1: Shelf registrations are subject to a higher level of scrutiny than standard public offerings.

Statement 2: Collateral that is "on special" carries a lower repo rate than "general collateral."

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: A

Shelf-registrations are subject to lower levels of scrutiny than standard public offerings, which is why only well-established issuers with proven financial strength can take advantage of this facility.

Statement 2 is correct. The more scarce/in demand a particular piece of collateral, the lower the repo rate. This is because the borrower has an asset that lenders of cash may want for specific reasons (e.g. to short the security).

17. Bonds issued by GSEs are *most likely* classified as:

    A. Corporate bonds.

    B. Non-sovereign bonds.

    C. Quasi-government bonds.

    Answer: C

    Government-sponsored enterprises are quasi-government entities. While they perform various functions for the national government, they are not actual government entities, which is why bonds issued by them are not classified as non-sovereign bonds.

18. Which of the following is *least likely* regarding MTNs?

    A. MTNs offer lower yields than otherwise-identical publicly-issued bonds.

    B. MTNs are continuously offered to investors by the agent of the issuer.

    C. MTNs can be customized to meet investor requirements, which may result in limited liquidity.

    Answer: A

    MTNs offer **higher** yields than otherwise identical publicly-traded bonds as they are customized to the needs of investors and entail less liquidity than comparable publicly issued bonds.

Reading 53: Introduction to Fixed-Income Valuation

1. The price-yield profile on an option-free bond is *most likely*:
   A. Upward sloping and concave in shape.
   B. Downward sloping and convex in shape.
   C. Downward sloping and linear.
2. A bond will *most likely* trade at a discount when:
   A. Its coupon rate is higher than the market yield.
   B. The market yield is higher than its coupon rate.
   C. It is callable.
3. All other factors constant, the longer a coupon paying bond's term to maturity:
   A. The greater its coupon rate.
   B. The greater its price sensitivity to changes in interest rates.
   C. The greater its discount to par.
4. The interest rate sensitivity of a bond's price is *most likely* higher if:
   A. It has a relatively short term to maturity.
   B. Current market yields are relatively high.
   C. Current market yields are relatively low.
5. Which of the following statements is *most likely*?
   A. All other factors constant, a bond with a higher coupon rate has higher interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.
   B. All other factors constant, a bond with a lower coupon rate has higher interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.

C. All other factors constant, a bond with a higher coupon rate has lower interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.

6. A 10% annual coupon bond with a 5-year term was issued one year ago for $950. Assuming that market yields have remained at the same level since bond issuance, which of the following is *most likely* the price of the bond today?

   A. $930

   B. $965

   C. $1,005

7. Assume that all rates provided are effective annual rates. The current 5-year spot rate is 5%. The 3-year forward rate two years from today is given as 4%. The two-year spot rate is *closest to*:

   A. 9.62%

   B. 5.67%

   C. 6.52%

8. Assume that the yields provided here are all stated on a semiannual bond basis. The current 6-month spot rate equals 2%. The two year spot rate equals 3%. Which of the following is *most likely*?

   A. The 1.5-year forward rate 6 months from today equals 3.33%

   B. The 6 month forward rate 6 months from today equals 1.67%

   C. The 1.5-year forward rate 6 months from today equals 1.67%

9. An analyst is given the following effective annual rates:

   3-year spot rate = 4%

   5-year spot rate = 5%

   4-year forward rate 3 years from today = 6%

   3-year forward rate 7 years from today = 7%

   Which of the following is *most likely* regarding the 2-year forward rate 5 years from today?

   A. It cannot be determined with the rates provided in the question.

B. It equals 5.48%.

C. It equals 11.27%.

10. Assume that all rates provided are effective annual rates. The 4-year spot rate equals 6.4%, and the 13-year spot rate is 6.25%. The 9-year forward rate after 4 years is *closest to*:

    A. 6.18%

    B. 6.28%

    C. 6.38%

11. Which of the following is *least* likely an assumption implicit in the yield-to-maturity calculation?

    A. The bond is held until the next coupon payment date.

    B. All interim cash flows are invested at the stated yield-to-maturity until maturity.

    C. The issuer makes all promised payments on time in their full amount.

12. The semiannual bond basis yield of a 10-year, $1,000 par, semiannual-pay bond with an 8% coupon rate that trades at $925 is *closest to*:

    A. 4.58%

    B. 9.16%

    C. 9.18%

13. Which of the following yield measures is *most likely* based on actual coupon payment dates?

    A. Street convention yield.

    B. True yield.

    C. Interest yield.

14. Consider the following statements:

    Statement 1: For floating-rate bonds, a discount arises when the quoted margin is lower than the required margin.

    Statement 2: For fixed-rate bonds, a discount arises when the fixed coupon rate is lower than the required margin.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

15. Consider the following statements:

Statement 1: A money market discount rate understates the rate of return to the investor.

Statement 2: A money market add-on yield accurately represents the return to the investor.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

16. Which of the following is *most likely* regarding the bond equivalent yield?

A. It is stated on a 360-day year and on an add-on yield basis.

B. It is stated on a 365-day year and on an add-on yield basis.

C. It is stated on a 365-day year and on a discount rate basis.

17. Which of the following is *most likely* a spread on top of a government spot rate curve?

A. G-spread

B. I-Spread

C. z-spread

18. Which of the following is *most likely* a spread on top of a standard swap rate?

A. G-spread

B. I-Spread

C. z-spread

Use the following information to answer Questions 19 to 21:

A 7% U.S. corporate bond is priced for settlement on June 25, 2015. The bond makes semiannual coupon payments on March 11 and September 11 of each year and matures on September 11, 2026. The bond uses the 30/360 day-count convention for accrued interest.

19. Given that stated annual yield-to-maturity is 6.3%, the full price of the bond on June 25 is *closest to*:

    A. $105.6665

    B. $107.5771

    C. $108.8551

20. Given that stated annual yield-to-maturity is 6.3%, the accrued interest of the bond is *closest to*:

    A. $1.82

    B. $2.0222

    C. $3.4667

21. Given that stated annual yield-to-maturity is 6.3%, the flat price per 100 of par value of the bond is *closest to*:

    A. $97.9778

    B. $103.6443

    C. $105.5549

22. An analyst is trying to estimate the value of a relatively illiquid 5-year, 4.5% annual-pay coupon bond. She identifies two corporate bonds that have similar credit quality:

    - Bond A is a 3-year, 4% annual-pay bond priced at 101 per 100 of par value.
    - Bond B is a 6-year, 6% annual-pay bond priced at 98 per 100 of par value.

    The price of the illiquid bond per 100 of par value is *closest to*:

    A. $97.7201

B. $99.7152

C. $100

23. ABC Company is planning to issue a 4-year bond. The only other debt that the company currently has outstanding is a 3% annual-pay bond which is currently trading at 102 per 100 of par and has three full years to maturity.

    The following information is provided:

    - Currently there are no outstanding government bonds with 3 years to maturity.
    - The yield on a 2-year government bond is 0.8%, while the yield on a 4-year government bond is 1.4%.
    - The term structure of credit spreads for bonds with the same credit rating as ABC Company suggests that 4-year spreads are around 25 bps higher than 3-year spreads.

    The expected market discount rate on the ABC's planned 4-year bond issue is *closest to*:

    A. 1.4524%

    B. 2.3024%

    C. 2.8524%

24. A 6-year, 5% semiannual-pay government bond is priced at 97 per 100 of par value. The annual yield-to-maturity (stated annual yield) based on quarterly compounding is *closest to*:

    A. 5.5198

    B. 5.521%

    C. 5.557%

25. Consider the following information:

	Bond A	Bond B
Annual coupon rate	8%	11%
Coupon payment frequency	Semiannually	Quarterly
Years to maturity	4	4

Price (per 100 of par value)	96.00	117.11
YTM	9.218%	9.78%

The analyst believes that Bond B has a little more risk than Bond A.

When yields are annualized for quarterly compounding, the compensation for additional risk Bond B offers relative to Bond A is *closest to*:

A. 56.2 bps

B. 66.4 bps

C. 68.2 bps

Use the following information to answer Questions 26-29:

Consider the following quoted rates on four 180-day money market instruments:

Money Market Instrument	Quotation Basis	Assumed Number of Days in the Year	Quoted Rate
A	Discount Rate	360	4.15%
B	Discount Rate	365	4.30%
C	Add-On Rate	360	4.45%
D	Add-On Rate	365	4.50%

26. The bond equivalent yield for Bond A is *closest to*:

A. 4.15%

B. 4.208%

C. 4.297%

27. The bond equivalent yield for Bond B is *closest to*:

A. 4.15%

B. 4.30%

C. 4.39%

28. The bond equivalent yield for Bond C is *closest to*:

    A. 4.15%

    B. 4.45%

    C. 4.51%

29. The bond equivalent yield for Bond D is *closest to*:

    A. 4.39%

    B. 4.50%

    C. 4.60%

Use the following information to answer Questions 30 and 31:

An investor collects the following information on U.S. zero-coupon government bonds. The yields-to-maturity are stated on a semiannual bond basis.

Maturity	YTM	Price (Per 100 of Par)
1 year	1.872%	98.154
3 year	2.058%	94.042
5 year	2.645%	87.688

30. The 2-year forward rate one year from today (or 1y2y as the curriculum would put it) is *closest to*:

    A. 0.091%

    B. 1.076%

    C. 2.151%

31. The ${}_2f_3$ (or 3y2y as the curriculum would put it) implied forward rate is *closest to*:

    A. 1.764%

    B. 3.529%

    C. 3.532%

Reading 53: Introduction to Fixed-Income Valuation

1. The price-yield profile on an option-free bond is *most likely*:

   A. Upward sloping and concave in shape.

   B. Downward sloping and convex in shape.

   C. Downward sloping and linear.

   Answer: B

   The price-yield profile for an option-free bond is convex and downward-sloping. Interest rates and bond prices are inversely related.

2. A bond will *most likely* trade at a discount when:

   A. Its coupon rate is higher than the market yield.

   B. The market yield is higher than its coupon rate.

   C. It is callable.

   Answer: B

   A bond will trade at a discount when the yield required by the market is greater than the coupon rate that it offers.

3. All other factors constant, the longer a coupon paying bond's term to maturity:

   A. The greater its coupon rate.

   B. The greater its price sensitivity to changes in interest rates.

   C. The greater its discount to par.

   Answer: B

   The longer the bond's term to maturity the greater its interest rate risk.

   A bond's coupon rate does not depend on its term to maturity.

   The amount of the discount depends on the difference between market interest rates and the bond's coupon rate.

4. The interest rate sensitivity of a bond's price is *most likely* higher if:

A. It has a relatively short term to maturity.

B. Current market yields are relatively high.

C. Current market yields are relatively low.

Answer: C

- The **lower** the market yield, the more sensitive a bond's price to changes in interest rates.
- The **longer** the bond's term to maturity, the greater the bond's price sensitivity to changes in interest rates.

5. Which of the following statements is *most likely*?

A. All other factors constant, a bond with a higher coupon rate has higher interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.

B. All other factors constant, a bond with a lower coupon rate has higher interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.

C. All other factors constant, a bond with a higher coupon rate has lower interest rate risk and lower reinvestment risk than a bond with a higher coupon rate.

Answer: B

All other factors constant, a bond with a **lower** coupon rate has **higher** interest rate risk and **lower** reinvestment risk than a bond with a higher coupon rate.

6. A 10% annual coupon bond with a 5-year term was issued one year ago for $950. Assuming that market yields have remained at the same level since bond issuance, which of the following is *most likely* the price of the bond today?

A. $930

B. $965

C. $1,005

Answer: B

The price of a bond converges towards par with the passage of time. The bond in question was issued at a discount. Given that yields do not change, the price of the bond one year into its term will be closer to its par value, but not above its par value.

7. Assume that all rates provided are effective annual rates. The current 5-year spot rate is 5%. The 3-year forward rate two years from today is given as 4%. The two-year spot rate is *closest to*:

   A. 9.62%

   B. 5.67%

   C. 6.52%

   Answer: C

   $(1 + {}_2s_0)^2 (1 + {}_3f_2)^3 = (1 + {}_5s_0)^5$

   ${}_2s_0 = 6.518\%$

8. Assume that the yields provided here are all stated on a semiannual bond basis. The current 6-month spot rate equals 2%. The two year spot rate equals 3%. Which of the following is *most likely*?

   A. The 1.5-year forward rate 6 months from today equals 3.33%

   B. The 6 month forward rate 6 months from today equals 1.67%

   C. The 1.5-year forward rate 6 months from today equals 1.67%

   Answer: A

   Please note: The rates provided in the question must be divided by two as we are dealing with six-month periods.

$$\left(1 + \frac{{}_1s_0}{2}\right)^1 \left(1 + \frac{{}_3f_1}{2}\right)^3 \left(1 + \frac{{}_4s_0}{2}\right)^4$$

$$\left(1 + \frac{{}_3f_1}{2}\right) = 1.0167$$

$${}_3f_1 = 3.33\%$$

9. An analyst is given the following effective annual rates:

   3-year spot rate = 4%

   5-year spot rate = 5%

4-year forward rate 3 years from today = 6%

3-year forward rate 7 years from today = 7%

Which of the following is *most likely* regarding the 2-year forward rate 5 years from today?

A. It cannot be determined with the rates provided in the question.

B. It equals 5.48%.

C. It equals 11.27%.

Answer: B

$(1 + {}_3s_0)^3 (1 + {}_4f_3)^4 = (1 + {}_5s_0)^5 (1 + {}_2f_5)^2$

${}_2f_5 = 5.484\%$

10. Assume that all rates provided are effective annual rates. The 4-year spot rate equals 6.4%, and the 13-year spot rate is 6.25%. The 9-year forward rate after 4 years is *closest to*:

A. 6.18%

B. 6.28%

C. 6.38%

Answer: A

$(1 + {}_9f_4)^9 = (1 + {}_{13}s_0)^{13} / (1+ {}_4s_0)^4$

${}_9f_4 = 6.18\%$

11. Which of the following is *least* likely an assumption implicit in the yield to maturity calculation?

A. The bond is held until the next coupon payment date.

B. All interim cash flows are invested at the stated yield to maturity until maturity.

C. The issuer makes all promised payments on time in their full amount.

Answer: A

The YTM computation assumes that the bond is held until maturity.

12. The semiannual bond basis yield of a 10-year, $1,000 par, semiannual-pay bond with an 8% coupon rate that trades at $925 is *closest to*:

A. 4.58%

B. 9.16%

C. 9.18%

Answer: B

PV = −$925; N = 10×2 = 20; PMT = $40; FV = $1,000; CPT I/Y; I/Y = 4.581%

This calculated yield of 4.581% is the yield per semiannual period or semiannual discount rate. The semiannual bond basis yield therefore equals 4.581% × 2 = 9.16%.

13. Which of the following yield measures is *most* likely based on actual coupon payment dates?

A. Street convention yield.

B. True yield.

C. Interest yield.

Answer: B

The street convention yields assumes that all payments are made on scheduled dates regardless of whether they fall on weekends or holidays.

The true yields uses actual payment dates to compute the IRR of the bond's cash flows.

The interest yield is another name for the current yield, which is calculated by dividing the bond's annual cash coupon payment by its current price.

14. Consider the following statements:

Statement 1: For floating-rate bonds, a discount arises when the quoted margin is lower than the required margin.

Statement 2: For fixed-rate bonds, a discount arises when the fixed coupon rate is lower than the required margin.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Answer: A

Both statements are indeed correct. Fixed- and floating-rate bonds respond very similarly when it comes to credit risk.

15. Consider the following statements:

Statement 1: A money market discount rate understates the rate of return to the investor.

Statement 2: A money market add-on yield accurately represents the return to the investor.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Answer: A

A money market discount rate represents the return earned on the total return at maturity, not on the amount initially invested. As a result, it understates the rate of return to the investor.

A money market add-on yield represents the return earned on the amount initially invested, which makes it a reasonable measure of return.

16. Which of the following is *most likely* regarding the bond equivalent yield?

A. It is stated on a 360-day year and on an add-on yield basis.

B. It is stated on a 365-day year and on an add-on yield basis.

C. It is stated on a 365-day year and on a discount rate basis.

Answer: B

The bond equivalent yield is a money market yield stated on a 365-day year on an add-on rate basis.

17. Which of the following is *most likely* a spread on top of a government spot rate curve?

A. G-spread

B. I-Spread

C. z-spread

Answer: C

The G-spread is a yield spread over an actual or interpolated government bond yield.

The I-spread is a yield spread over the standard swap rate in the same currency with the same tenor as the subject bond.

The z-spread is a constant spread over the government spot rate curve.

18. Which of the following is *most likely* a spread on top of a standard swap rate?

A. G-spread

B. I-Spread

C. z-spread

Answer: B

The G-spread is a yield spread over an actual or interpolated government bond yield.

The I-spread is a yield spread over the standard swap rate in the same currency with the same tenor as the subject bond.

The z-spread is a constant spread over the government spot rate curve.

Use the following information to answer Questions 19 to 21:

A 7% U.S. corporate bond is priced for settlement on June 25, 2015. The bond makes semiannual coupon payments on March 11 and September 11 of each year and matures on September 11, 2026. The bond uses the 30/360 day-count convention for accrued interest.

19. Given that stated annual yield-to-maturity is 6.3%, the full price of the bond on June 25 is *closest to*:

A. $105.6665

B. $107.5771

C. $108.8551

Answer: B

Given the 30/360 day-count convention, there are 104 days between the last coupon on 11 March 2015 and the settlement date on June 25, 2015 (19 days between March 11 and March 30, plus 60 days for the full months of April and May, plus 25 days in June). Therefore, the fraction of the coupon period that has gone by equals 104/180.

As of the last coupon payment date, there are 11.5 years (23 semiannual periods) remaining until maturity.

Using stated annual yield-to-maturity of 6.30%, or 3.15% per semiannual period, the price as of the last coupon payment date is calculated as:

N = 23; PMT = -\$3.50; FV = -\$100; I/Y = 3.15%; CPT PV; PV = 105.6665

The full price on June 25 is calculated as:

$PV^{Full} = 105.6665 \times (1.0315)^{104/180} = \mathbf{\$107.5771}$

20. Given that stated annual yield-to-maturity is 6.3%, the accrued interest of the bond is *closest to*:

    A. \$1.82

    B. \$2.0222

    C. \$3.4667

    Answer: B

    The accrued interest is calculated as:

    $AI = 104/180 \times 3.50 = \mathbf{\$2.0222}$

21. Given that stated annual yield-to-maturity is 6.3%, the flat price per 100 of par value of the bond is *closest to*:

    A. \$97.9778

    B. \$103.6443

    C. \$105.5549

    Answer: C

    The flat price is calculated as:

    $PV^{Flat} = 107.5771 - 2.0222 = \$105.5549$

22. An analyst is trying to estimate the value of a relatively illiquid 5-year,

4.5% annual-pay coupon bond. She identifies two corporate bonds that have similar credit quality:

- Bond A is a 3-year, 4% annual-pay bond priced at 101 per 100 of par value.
- Bond B is a 6-year, 6% annual-pay bond priced at 98 per 100 of par value.

The price of the illiquid bond per 100 of par value is *closest to*:

A. \$97.7201

B. \$99.7152

C. \$100

Answer: B

The first step is to determine the yields-to-maturity on the comparable bonds.

The required yield on the 3-year, 4% bond priced at 101 is calculated as:

$$N = 3;\ PMT = -\$4;\ FV = -\$100;\ PV = \$101;\ CPT\,I/Y;\ I/Y = 3.642\%$$

The required yield on the 6-year, 6% bond priced at 98 is calculated as:

$$N = 6;\ PMT = -\$6;\ FV = -\$100;\ PV = \$98;\ CPT\,I/Y;\ I/Y = 6.412\%$$

The market discount rate for the 5-year bond can be obtained using linear interpolation.

$$0.03642 + (1/3) \times \left(0.06412 - 0.03642\right) = 0.04565$$

Given an estimated yield-to-maturity of 4.565%, the price of the illiquid 5-year, 4.5% annual-pay bond can be estimated as:

$$N = 5;\ PMT = -\$4.5;\ FV = -\$100;\ I/Y = 4.565\%;\ CPT\,PV = \$99.7152$$

23. ABC Company is planning to issue a 4-year bond. The only other debt that the company currently has outstanding is a 3% annual-pay bond which is currently trading at 102 per 100 of par and has three full years to maturity.

The following information is provided:

- Currently there are no outstanding government bonds with 3 years to maturity.
- The yield on a 2-year government bond is 0.8%, while the yield on a 4-year government bond is 1.4%.
- The term structure of credit spreads for bonds with the same credit rating as ABC Company suggests that 4-year spreads are around 25 bps higher than 3-year spreads.

The expected market discount rate on the ABC's planned 4-year bond issue is *closest to*:

A. 1.4524%

B. 2.3024%

C. 2.8524%

Answer: C

The first step here is to compute the yield-to-maturity on the ABC's outstanding bonds that have 3 years remaining until maturity:

PV = \$102; PMT = −\$3; FV = −\$100; N = 3; CPT I/Y; I/Y = 2.3024%

Next, we compute the estimated yield-to-maturity on a government bond with 3 years until maturity using the 2-year and 4-year government bond yields. This estimated yield on the 3-year government bond is then used to estimate the credit spread on ABC's 3-year bond.

Estimate 3-year government bond yield = (0.8% + 1.4%) / 2 = 1.1%

Estimated credit spread on ABC's 3-year bond = 2.3024% – 1.1% = 1.2024%

Then, we use the term structure of credit spreads for issues with a similar rating as the one in question to determine the expected spread on the 4-year bond ABC plans to issue:

$$\begin{aligned} \text{Expected spread on 4} - \text{year bond} &= \text{Estimated spread on 3} - \text{year bond} + 0.0025 \\ &= 0.012024 + 0.0025 = 0.014524 \end{aligned}$$

Finally, we add the expected spread on ABC's planned 4-year issue to the 4-year government bond yield (the benchmark) to determine the expected market discount rate on the issue:

Expected discount rate on new issue = 0.014 + 0.014524 = 0.028524 or 2.8524%

24. A 6-year, 5% semiannual-pay government bond is priced at 97 per 100 of par value. The annual yield-to-maturity (stated annual yield) based on quarterly compounding is *closest to*:

A. 5.5198

B. 5.521%

C. 5.557%

Answer: C

We first calculate the yield per semiannual period on the semiannual-pay bond.

$$N = 12; \text{PMT} = \$2.5; \text{FV} = \$100; \text{PV} = -\$97; \text{CPTI/Y} = 2.798\%$$

The calculated yield of 2.798% is the yield per semiannual period. This rate is multiplied by two to determine the stated annual yield or the semiannual bond basis yield:

$$\text{Semiannual bond basis yield} = 2.798\% \times 2 = 5.596\%$$

To determine the stated annual yield based on quarterly compounding, we need to convert the stated annual yield of 5.596% from a periodicity of two to a periodicity of four.

$$(1 + 0.05596/2)^2 = (1 + \text{SAY}_4/4)^4$$

$$\text{SAY}_4 = 0.05557 \text{ or } \mathbf{5.557}\%$$

25. Consider the following information:

	Bond A	**Bond B**
Annual coupon rate	8%	11%
Coupon payment frequency	Semiannually	Quarterly
Years to maturity	4	4
Price (per 100 of par value)	96.00	117.11
YTM	9.218%	9.78%

The analyst believes that Bond B has a little more risk than Bond A.

When yields are annualized for quarterly compounding, the compensation for additional risk Bond B offers relative to Bond A is *closest to*:

A. 56.2 bps

B. 66.4 bps

C. 68.2 bps

Answer: B

Converting the periodicity of Bond A stated annual yield from two to four, we obtain a stated annual yield of 9.116%.

$$(1 + 0.0922/2)^2 = (1 + SAY_4/4)^4$$
$$SAY_4 = 9.116\%$$

This yield can be compared to the calculated yield-to-maturity on Bond B (with a periodicity of 4) of 9.78%. We can then say that the difference between the two i.e., 66.4 bps (= 0.0978 – 0.09116) captures the additional compensation offered on Bond B for its greater risk **when yields are annualized for quarterly compounding**.

Use the following information to answer Questions 26-29:

Consider the following quoted rates on four 180-day money market instruments:

Money Market Instrument	Quotation Basis	Assumed Number of Days in the Year	Quoted Rate
A	Discount Rate	360	4.15%
B	Discount Rate	365	4.30%
C	Add-On Rate	360	4.45%
D	Add-On Rate	365	4.50%

26. The bond equivalent yield for Bond A is *closest to*:

A. 4.15%

B. 4.208%

C. 4.297%

Answer: C

Bond A is quoted on a **discount rate** basis. We first use the following equation to determine PV, price per 100 of par:

$PV = FV \times [1 - (Days/Year) \times DR]$

$PV = 100 \times [1 - (180/360) \times 0.0415] = 97.925$

We then insert the PV of Bond A into following equation to determine the add-on rate based on a 365-day year (i.e., the bond equivalent yield):

$AOR = (Years/Days) \times [(FV - PV)/PV]$

$AOR = (365/180) \times [(100 - 97.925)/97.925] = 0.04297$

The bond equivalent yield for Bond A is **4.297%**.

27. The bond equivalent yield for Bond B is *closest to*:

A. 4.15%

B. 4.30%

C. 4.39%

Answer: C

Bond B is quoted on a **discount rate** basis (but assuming a 365-day year). We first use the following Equation to determine PV, price per 100 of par:

$PV = FV \times [1 - (Days/Year) \times DR]$

$PV = 100 \times (1 - (180/365) \times 0.043) = 97.879$

We then insert the PV of Bond B into the following Equation to determine the add-on rate based on a 365-day year (i.e., the bond equivalent yield):

$AOR = (Years/Days) \times [(FV - PV)/PV]$

$AOR = (365/180) \times [(100 - 97.879)/97.879] = 0.0439$

The bond equivalent yield for Bond B is **4.39%**.

28. The bond equivalent yield for Bond C is *closest to*:

A. 4.15%

B. 4.45%

C. 4.51%

Answer: C

Bond C is quoted on an **add-on rate** basis (assuming a 360-day year). In order to calculate the bond yield equivalent yield we first determine its **future value** (redemption amount) using the following Equation.

PV = FV / [1 + (Days/Year × AOR)]

FV = 100 + [100 × (180/360) × 0.0445] = 102.225

We then use the following Equation to determine the bond equivalent yield (based on a 365-day year).

AOR = (Years/Days) × [(FV – PV)/PV]

AOR = (365/180) × [(102.225 – 100)/100] = 0.04512

The bond equivalent yield for Bond C is **4.51%**.

29. The bond equivalent yield for Bond D is *closest to*:

A. 4.39%

B. 4.50%

C. 4.60%

Answer: B

The quoted rate for Bond D of 4.5% is a bond equivalent yield, which is defined as an add-on rate for a 365-day year.

Use the following information to answer Questions 30 and 31:

An investor collects the following information on U.S. zero-coupon government bonds. The yields-to-maturity are stated on a semiannual bond basis.

Maturity	YTM	Price (Per 100 of Par)
1 year	1.872%	98.154
3 year	2.058%	94.042

5 year	2.645%	87.688

30. The 2-year forward rate one year from today (or 1y2y as the curriculum would put it) is *closest to*:

A. 0.091%

B. 1.076%

C. 2.151%

Answer: C

$[1 + {}_1f_0/2]^2 \times [1 + {}_2f_1/2]^4 = [1 + {}_3f_0/2]^6$

$[1 + 0.01872/2]^2 \times [1 + {}_2f_1/2]^4 = [1 + 0.02058/2]^6$

${}_2f_1 = 0.02151$ or **2.151%**

31. The ${}_2f_3$ (or 3y2y as the curriculum would put it) implied forward rate is *closest to*:

A. 1.764%

B. 3.529%

C. 3.532%

Answer: B

$[1 + {}_3f_0/2]^6 \times [1 + {}_2f_3/2]^4 = [1 + {}_5f_0/2]^{10}$

$[1 + 0.02058/2]^6 \times [1 + {}_2f_3/2]^4 = [1 + 0.02645/2]^{10}$

${}_2f_3 = 0.03529$ or **3.529%**

Reading 54: An Introduction to Asset-Backed Securities

1. In a securitization, the issuer of asset-backed securities *most* likely refers to:

   A. The originator of loans.

   B. The special-purpose vehicle (SPV).

   C. The servicer of loans.

2. Consider the following statements:

   Statement 1: The lower the LTV ratio, the lower the protection the lender has for recovering the amount loaned in case the borrower defaults.

   Statement 2: Prepayments tend to rise when interest rates fall.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

3. The mortgage rate is *most* likely determined at the lender's discretion for a(n):

   A. Index-referenced ARM.

   B. Reviewable ARM.

   C. Rollover mortgage.

4. Consider the following statements:

   Statement 1: A pool of mortgage loans serves as collateral for collateralized mortgage obligations (CMOs).

   Statement 2: In a sequential-pay CMO, the tranche with the longest average life entails the least extension risk.

   Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

5. PAC tranches offer an improvement upon sequential-pay tranches in that they *most* likely offer protection from:

   A. Contraction risk.

   B. Extension risk.

   C. Prepayment risk.

6. Consider the following statements:

   Statement 1: The greater the par value of the support tranche relative to that of the PAC tranche, the lower the PAC's average life variability.

   Statement 2: Commercial loans in the U.S. are typically structured as recourse loans, which makes it important for investors to evaluate each property to assess credit risk.

   Which of the following is most likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

7. Credit risk is *most* likely an important consideration in the evaluation of:

   A. Agency RMBS issued by federal agencies.

   B. Agency RMBS issued by GSEs.

   C. Nonagency RMBS.

8. Consider the following statements:

   Statement 1: The residual tranche in a CMBS structure typically does not carry a specified interest rate.

   Statement 2: Call protection embedded in a CMBS structure results in the securities trading more like corporate bonds than residential mortgage-backed securities.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

9. Balloon risk in CMBS transactions *most* likely represents a type of:

   A. Extension risk.

   B. Credit risk.

   C. Contraction risk.

10. During the revolving period, which of the following is *least* likely to be passed on to investors in a credit card receivables backed ABS?

    A. Principal repayments.

    B. Fees collected from cardholders.

    C. Finance charges collected from cardholders.

Use the following information to answer Questions 11 to 13:

Consider a $100 million CDO with the following structure:

Tranche	Par Value	Coupon Rate
Senior	80,000,000	LIBOR + 70 basis points
Mezzanine	10,000,000	6-year Treasury rate + 110 basis points
Equity	10,000,000	—

The collateral backing the CDO consists of corporate bonds that mature in 6 years. The coupon rate for these bonds is the 6-year Treasury rate plus 270 basis points. The 6-year Treasury rate at the time of CDO issuance is given as 4%.

The asset manager enters into an agreement with a counterparty in which she agrees to pay the counterparty a fixed rate equal to the 6-year Treasury rate plus 70 basis points and receives LIBOR in return.

11. The notional principal of the interest rate swap will *most likely* equal:

    A. $10 million.

B. $80 million.

C. $100 million.

12. The amount available each year for the equity tranche is *closest* to:

    A. $530,000.

    B. $1,870,000.

    C. $5,160,000.

13. Given that asset management fees and other charges amount to $200,000 annually, the annual return on the equity tranche is *closest* to:

    A. 3.3%

    B. 6.7%

    C. 16.7%

14. Which of the following is *least* likely an amortizing asset?

    A. Residential mortgage loan.

    B. Auto loan.

    C. Credit card receivable.

15. In a securitization, the originator of the loans is *most* likely referred to as the:

    A. Servicer.

    B. Issuer.

    C. Seller.

16. Which of the following benefits does securitization *least* likely offer?

    A. Securitization allows banks to maintain ownership of securitized assets.

    B. Securitization enables investors to have a stronger claim on the collateral pool of assets.

    C. Securitization lowers the cost paid by borrowers and improves the return realized by investors.

17. The SMM *most* likely refers to the:

A. Amount of prepayment for a month as a percentage of the mortgage balance outstanding at the beginning of the month.

B. Amount of prepayment for a month as a percentage of the mortgage balance that was available to be prepaid that month.

C. Amount of prepayment for a month as a percentage of the mortgage balance that was available to be repaid that month.

Reading 54: An Introduction to Asset-Backed Securities

1. In a securitization, the issuer of asset-backed securities *most* likely refers to:

   A. The originator of loans.

   B. The special-purpose vehicle (SPV).

   C. The servicer of loans.

   Answer: B

   The SPV issues ABSs. The originator of the loans sells those loans to the SPV, and then these loans (receivables) serve as collateral for issued ABSs.

2. Consider the following statements:

   Statement 1: The lower the LTV ratio, the lower the protection the lender has for recovering the amount loaned in case the borrower defaults.

   Statement 2: Prepayments tend to rise when interest rates fall.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: B

   The lower (higher) the LTV ratio, the higher (lower) the borrower's equity, the less (more) likely the borrower is to default, and the more (less) protection the lender has for recovering the amount loaned in case the borrower defaults.

   Homeowners usually prepay their mortgages by refinancing their loans when interest rates fall.

3. The mortgage rate is *most* likely determined at the lender's discretion

for a(n):

A. Index-referenced ARM.

B. Reviewable ARM.

C. Rollover mortgage.

Answer: B

In an index-referenced adjustable-rate mortgage, the reset rate may be based on some reference rate or index.

In a reviewable ARM, the mortgage rate is determined at the lender's discretion.

In a rollover or renegotiable mortgage, the mortgage rate is fixed initially for a specified period and is then adjusted to a new fixed rate.

4. Consider the following statements:

Statement 1: A pool of mortgage loans serves as collateral for collateralized mortgage obligations (CMOs).

Statement 2: In a sequential-pay CMO, the tranche with the longest average life entails the least extension risk.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

For CMOs, the mortgage-related products from which cash flows are obtained are considered the collateral; i.e., a pool of mortgage pass-through security serves as the collateral.

For mortgage pass-through securities, a pool of mortgage loans serves as collateral.

In a sequential-pay CMO, the tranche that has the longest average life offers the most protection against contraction risk and entails the most extension risk.

5. PAC tranches offer an improvement upon sequential-pay tranches in

that they *most* likely offer protection from:

A. Contraction risk.

B. Extension risk.

C. Prepayment risk.

Answer: C

PAC bonds offer investors protection against prepayment risk, which encompasses contraction and extension risk.

6. Consider the following statements:

Statement 1: The greater the par value of the support tranche relative to that of the PAC tranche, the lower the PAC's average life variability.

Statement 2: Commercial loans in the U.S. are typically structured as recourse loans, which makes it important for investors to evaluate each property to assess credit risk.

Which of the following is most likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

The greater the par value of the support tranche relative to that of the PAC tranche, the greater the prepayment protection for the PAC, the lower the PAC's average life variability, and the greater the support tranche's average life variability.

In the U.S., commercial mortgage loans are **nonrecourse** loans; i.e., if there is a default and proceeds from sale of the property are insufficient for repayment, the lender has no recourse to the borrower for the unpaid amount. As a result, evaluation of credit risk for commercial mortgage loans requires examining the income-generating capacity and value of each property on a stand-alone basis.

7. Credit risk is *most* likely an important consideration in the evaluation of:

A. Agency RMBS issued by federal agencies.

B. Agency RMBS issued by GSEs.

C. Nonagency RMBS.

Answer: C

There is no credit risk for agency RMBS issued by federal agencies, as they are backed by the full faith and credit of the U.S. government.

There is minimal credit risk for agency MBS issued by GSEs, as they are guaranteed by the GSEs themselves.

Nonagency RMBS are not guaranteed by the government or by GSEs.

8. Consider the following statements:

Statement 1: The residual tranche in a CMBS structure typically does not carry a specified interest rate.

Statement 2: Call protection embedded in a CMBS structure results in the securities trading more like corporate bonds than residential mortgage-backed securities.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: C

The equity or residual tranche typically has no specific interest rate (as it is the residual tranche). Investors price it based on the expected residual rate of return. Actual returns can be better or worse than expected depending on actual future interest rate movements and actual defaults.

Typically, CMBS investors have significant call protection, which actually results in these securities trading more like corporate bonds than like RMBS.

9. Balloon risk in CMBS transactions *most* likely represents a type of:

A. Extension risk.

B. Credit risk.

C. Contraction risk.

Answer: A

Most commercial loans that back CMBSs have balloon maturity provisions; i.e., they require a significant amount of principal to be repaid at maturity (as opposed to during the term of the loan). This exposes investors to balloon risk, as there will be a "default event" if the borrower is unable to generate the entire (significant) amount of funds required to retire the balloon balance. In the context of CMBS transactions, balloon risk is more like extension risk, as there is usually a workout period during which the borrower and lender try to modify the original terms of the loan to ensure eventual repayment.

10. During the revolving period, which of the following is *least* likely to be passed on to investors in a credit card receivables backed ABS?

A. Principal repayments.

B. Fees collected from cardholders.

C. Finance charges collected from cardholders.

Answer: A

Principal repayments are only passed on to security holders once the principal-amortizing period sets in.

Use the following information to answer Questions 11 to 13:

Consider a $100 million CDO with the following structure:

Tranche	**Par Value**	**Coupon Rate**
Senior	80,000,000	LIBOR + 70 basis points
Mezzanine	10,000,000	6-year Treasury rate + 110 basis points
Equity	10,000,000	—

The collateral backing the CDO consists of corporate bonds that mature in 6 years. The coupon rate for these bonds is the 6-year Treasury rate plus 270 basis points. The 6-year Treasury rate at the time of CDO issuance is given as 4%.

The asset manager enters into an agreement with a counterparty in which she agrees to pay the counterparty a fixed rate equal to the 6-

year Treasury rate plus 70 basis points and receives LIBOR in return.

11. The notional principal of the interest rate swap will *most likely* equal:

    A. $10 million.

    B. $80 million.

    C. $100 million.

    Answer: B

    The notional principal on the swap will be $80 million because the floating-rate exposure of the asset manager is limited to the par value of the senior tranche.

12. The amount available each year for the equity tranche is *closest* to:

    A. $530,000.

    B. $1,870,000.

    C. $5,160,000.

    Answer: B

    Interest received by the asset manager on the collateral:
    $100,000,000 × (0.04 + 0.027) = $6,700,000

    Interest paid to the senior CDO tranche:
    $80,000,000 × (LIBOR + 70bps)

    Interest paid to the mezzanine tranche:
    $10,000,000 × (0.04 + 0.011) = $510,000

    Interest paid by the asset manager on the interest rate swap as the fixed-rate payer:
    $80,000,000 × (0.04 + 0.007) = $3,760,000

    Interest received by the asset manager on the interest rate swap as the floating-rate receiver:
    $80,000,000 × (LIBOR)

    Netting the interest payments coming in and going out:

    = $6,700,000 + ($80,000,000 × LIBOR) – [$80,000,000 × (LIBOR + 70bps) + $510,000 + $3,760,000]

    = $6,700,000 + $80,000,000 × (LIBOR)– [$4,270,000 +

$80,000,000 × (LIBOR+ 70bps)]

= $6,700,000 + $80,000,000 × (LIBOR) – $4,270,000 – $80,000,000 × (LIBOR) –$80,000,000 × 70bps

= $2,430,000 – $80,000,000 × 70bps = **$1,870,000**

13. Given that asset management fees and other charges amount to $200,000 annually, the annual return on the equity tranche is *closest* to:

    A. 3.3%

    B. 6.7%

    C. 16.7%

    Answer: C

$$\boxed{\frac{\$1,870,000\$200,000}{\$10,000,000} = 16.7\,\%}$$

14. Which of the following is *least* likely an amortizing asset?

    A. Residential mortgage loan.

    B. Auto loan.

    C. Credit card receivable.

    Answer: C

    Credit card receivables are nonamortizing assets, as they only require a monthly minimum payment with no scheduled principal repayment.

15. In a securitization, the originator of the loans is *most* likely referred to as the:

    A. Servicer.

    B. Issuer.

    C. Seller.

    Answer: C

    The originator of loans is known as the seller, as it sells the loans to an SPV. The SPV is the issuer of the asset-backed securities. The originator may also perform the role of the servicer, but that does not necessarily have to be the case.

16. Which of the following benefits does securitization *least* likely offer?

    A. Securitization allows banks to maintain ownership of securitized assets.

    B. Securitization enables investors to have a stronger claim on the collateral pool of assets.

    C. Securitization lowers the cost paid by borrowers and improves the return realized by investors.

    Answer: A

    Ownership of the securitized assets is transferred to an SPV in a securitization.

17. The SMM *most* likely refers to the:

    A. Amount of prepayment for a month as a percentage of the mortgage balance outstanding at the beginning of the month.

    B. Amount of prepayment for a month as a percentage of the mortgage balance that was available to be prepaid that month.

    C. Amount of prepayment for a month as a percentage of the mortgage balance that was available to be repaid that month.

    Answer: B

    The SMM equals the amount of prepayment for a month as a percentage of the mortgage balance that was available to be prepaid that month. The mortgage balance available to be prepaid during a particular month equals the mortgage balance available to be repaid that month (mortgage balance outstanding at the beginning of the month) adjusted for the scheduled principal payment.

Reading 55: Understanding Fixed-Income Risk and Return

1. Which of the following is *least* likely a yield duration statistic?

   A. Money duration.

   B. Price value of a basis point.

   C. Effective duration.

2. For a traditional fixed-rate bond, the difference between modified and effective duration is *least* likely to become smaller as:

   A. The yield curve is flatter.

   B. The time-to-maturity is longer.

   C. The bond is priced close to par.

3. Consider the following statements:

   Statement 1: All other things remaining the same, a lower coupon bond has lower interest rate risk than a higher coupon bond.

   Statement 2: All other things remaining the same, a lower yield-to-maturity bond has higher interest rate risk than a higher yield-to-maturity bond.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

4. Consider the following statements:

   Statement 1: All other things remaining the same, a callable bond is less sensitive to a change in benchmark interest rates than an otherwise identical non-callable bond.

   Statement 2: All other things remaining the same, a putable bond is more sensitive to a change in benchmark interest rates than an otherwise identical non-putable bond.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

5. Consider the following statements:

Statement 1: All other things remaining the same, the longer the term to maturity of a bond, the greater the convexity.

Statement 2: Given two bonds with the same duration, the one with a greater dispersion of cash flows will have greater convexity.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

6. Consider the following statements:

Statement 1: All other things remaining the same, a bond with higher convexity will outperform one with lower convexity in both bull and bear markets.

Statement 2: Callable bonds exhibit negative convexity at low yields, but traditional fixed-rate bonds and putable bonds exhibit positive convexity at all yield levels.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

7. An investor who plans to hold on to a bond until maturity is *least* likely to be concerned with:

A. Credit risk.

B. Interest rate risk.

C. Reinvestment risk.

8. Which of the following is *most* likely?

   When the investment horizon is greater than the Macaulay duration of the bond:

   A. Reinvestment risk dominates market price risk and the investor is concerned about interest rates falling.

   B. Market price risk dominates reinvestment risk and the investor is concerned about interest rates falling.

   C. Market price risk dominates reinvestment risk and the investor is concerned about interest rates rising.

9. Consider the following statements:

   Statement 1: An investor with a negative duration gap is currently at risk of lower interest rates.

   Statement 2: For a consol, Macaulay duration equals its time-to-maturity.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

10. The issuer of a callable bond has *most* likely:

    A. Sold an option-free bond and sold a call option on the bond

    B. Purchased an option-free bond and purchased a call option on the bond

    C. Sold an option-free bond and purchased a call option on the bond.

11. When interest rates rise, the option embedded in a callable bond will *most* likely:

    A. Increase in value.

    B. Decrease in value.

    C. Undergo no change in value.

12. The market price of a callable bond is *least* likely to lie:

    A. Above the price of a similar option-free bond.

    B. Below the bond's par value.

    C. Below the price of a similar option free bond.

13. The holder of a putable bond has *most* likely:

    A. Purchased an option-free bond and purchased a put option on the bond.

    B. Sold an option-free bond and purchased a put option on the bond.

    C. Sold an option-free bond and sold a put option on the bond.

14. At relatively high yield levels, as interest rates further increase, the value of a putable bond *most* likely:

    A. Increases at a decreasing rate.

    B. Decreases at an increasing rate.

    C. Decreases at a decreasing rate.

15. At high yield levels, as interest rates further increase, the value of a put option embedded in a putable bond *most* likely:

    A. Increases at a decreasing rate.

    B. Decreases at an increasing rate.

    C. Increases at an increasing rate.

16. A callable bond is currently trading at 102.5 per 100 of par. When the government par curve is raised by 25 bps, the value of the bond falls to 100.68, and when it is lowered by 25 bps the value of the bond rises to 104.51. The effective duration of this bond is *closest* to:

    A. 3.83

    B. 7.47

    C. 297.31

Use the following information to answer Question 17 and 18:

Consider a 5-year, annual-pay bond with a par value of $2.5 million. The bond has a modified duration of 4.25 and a full price of 102.55 per 100 of par.

17. The money duration of the bond in terms of the actual size of the position is *closest* to:

    A. $2,563,750

    B. $10,625,000

    C. $10,895,937.50

18. The impact of a 50 bps increase in yield-to-maturity on the dollar value would *most* likely be:

    A. The value of the position would increase by $54,479.69.

    B. The value of the position would fall by $54,479.69.

    C. No change in Money duration as it has not impacted the change in yields.

19. Consider a newly-issued 5-year, 7% annual-pay bond that is priced at 96 per 100 of par to yield 8%. The price value of a basis point for this bond per 100 of par is *closest* to:

    A. $0.02

    B. $0.04

    C. $0.08

Use the following to answer Question 20 and 21:

Consider the following information regarding a bond with a par value of $100:

- Initial YTM = 6%
- PV_0 = $101.7893
- Change in yields = 0.0005
- PV_+ = $101.52
- PV_- = $102.06
- ApproxModDur = 5.36

20. The approximate convexity of the bond is *closest* to:

A. 5.36

B. 50.15

C. 55.02

21. The estimated percentage price change resulting from a 100 bps increase in the yield-to-maturity is *closest* to:

A. 4.81%

B. 5.085%

C. 5.635%

22. Given a nonparallel shift in the yield curve, yield curve risk for a bond is *most* likely measured using:

A. Effective duration.

B. Modified duration.

C. Key rate duration.

Reading 55: Understanding Fixed-Income Risk and Return

1. Which of the following is *least* likely a yield duration statistic?

   A. Money duration.

   B. Price value of a basis point.

   C. Effective duration.

   Answer: C

   Modified duration, Macaulay duration, money duration and PVBP are all yield duration statistics. Effective duration is a curve duration statistic.

2. For a traditional fixed-rate bond, the difference between modified and effective duration is *least* likely to become smaller as:

   A. The yield curve is flatter.

   B. The time-to-maturity is longer.

   C. The bond is priced close to par.

   Answer: B

   The shorter the time-to-maturity, the smaller the difference between modified and effective duration for traditional fixed-rate bonds.

3. Consider the following statements:

   Statement 1: All other things remaining the same, a lower coupon bond has lower interest rate risk than a higher coupon bond.

   Statement 2: All other things remaining the same, a lower yield-to-maturity bond has higher interest rate risk than a higher yield-to-maturity bond.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

All other things remaining the same, a lower coupon bond has higher interest rate risk (duration) than a higher coupon bond.

Statement 2 is correct. All other things remaining the same, a lower yield-to-maturity bond has higher interest rate risk (duration) than a higher yield-to-maturity bond. A higher YTM reduces the weighted average time to receipt of the bond's cash flows.

4. Consider the following statements:

Statement 1: All other things remaining the same, a callable bond is less sensitive to a change in benchmark interest rates than an otherwise identical non-callable bond.

Statement 2: All other things remaining the same, a putable bond is more sensitive to a change in benchmark interest rates than an otherwise identical non-putable bond.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

The presence of an embedded option (be it a call or a put) reduces the duration of the bond and makes it less sensitive to changes in the benchmark yield curve, assuming there is no change in credit risk.

5. Consider the following statements:

Statement 1: All other things remaining the same, the longer the term to maturity of a bond, the greater the convexity.

Statement 2: Given two bonds with the same duration, the one with a greater dispersion of cash flows will have greater convexity.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: C

Both statements are indeed correct.

6. Consider the following statements:

   Statement 1: All other things remaining the same, a bond with higher convexity will outperform one with lower convexity in both bull and bear markets.

   Statement 2: Callable bonds exhibit negative convexity at low yields, but traditional fixed-rate bonds and putable bonds exhibit positive convexity at all yield levels.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: C

   The greater the convexity of a bond, the greater the price appreciation when yields decrease, and the lower the price depreciation when yields increase.

   Callable bonds exhibit negative convexity at low yield levels. As it becomes increasingly likely that the issuer will exercise the embedded call option, the call price acts as a cap on the bond's value and the slope of the price-yield profile flattens (the rate of change of duration becomes negative). Traditional fixed-rate bonds and putable bonds always have positive convexity.

7. An investor who plans to hold on to a bond until maturity is *least* likely to be concerned with:

   A. Credit risk.

   B. Interest rate risk.

   C. Reinvestment risk.

Answer: B

A buy-and-hold investor will not be concerned with interest rate risk as she does not plan to sell the bond before maturity.

8. Which of the following is *most* likely?

   When the investment horizon is greater than the Macaulay duration of the bond:

   A. Reinvestment risk dominates market price risk and the investor is concerned about interest rates falling.

   B. Market price risk dominates reinvestment risk and the investor is concerned about interest rates falling.

   C. Market price risk dominates reinvestment risk and the investor is concerned about interest rates rising.

   Answer: A

   When the investment horizon is greater than the Macaulay duration of the bond, reinvestment risk dominates market price risk and the investor is concerned about interest rates falling.

9. Consider the following statements:

   Statement 1: An investor with a negative duration gap is currently at risk of lower interest rates.

   Statement 2: For a consol, Macaulay duration equals its time-to-maturity.

   Which of the following is *most* likely?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: A

   For an investor with a negative duration gap, the investment horizon is greater than Macaulay duration, which makes her more concerned about interest rates falling as she is more concerned by reinvestment risk than market price risk.

For a consol (non-callable perpetuity), Macaulay duration remains constant at all yield levels. Macaulay duration for a zero-coupon bond equals its time-to-maturity.

10. The issuer of a callable bond has *most* likely:

    A. Sold an option-free bond and sold a call option on the bond

    B. Purchased an option-free bond and purchased a call option on the bond

    C. Sold an option-free bond and purchased a call option on the bond.

    Answer: C

    The issuer of a callable bond essentially sells an option-free bond and purchases a call option on the bond.

11. When interest rates rise, the option embedded in a callable bond will *most* likely:

    A. Increase in value.

    B. Decrease in value.

    C. Undergo no change in value.

    Answer: B

    When interest rates rise, bond prices fall, so the option to call (purchase) the bond decreases in value.

12. The market price of a callable bond is *least* likely to lie:

    A. Above the price of a similar option-free bond.

    B. Below the bond's par value.

    C. Below the price of a similar option free bond.

    Answer: A

    The price of a callable bond cannot lie above the price of a similar option-free bond. Even if the embedded call option holds zero value, the value of the callable bond would only equal that of the option-free bond.

    If interest rates were to rise above the coupon rate, the callable bond could trade at a discount to par.

13. The holder of a putable bond has *most* likely:

    A. Purchased an option-free bond and purchased a put option on the bond.

    B. Sold an option-free bond and purchased a put option on the bond.

    C. Sold an option-free bond and sold a put option on the bond.

    Answer: A

    An investor in a putable bond is basically long on an option-free bond and holds a put option on the bond.

14. At relatively high yield levels, as interest rates further increase, the value of a putable bond *most* likely:

    A. Increases at a decreasing rate.

    B. Decreases at an increasing rate.

    C. Decreases at a decreasing rate.

    Answer: C

    At high yield levels, as interest rates further increase, the value of a putable bond decreases at a decreasing rate as the put price acts as a floor on its value.

15. At high yield levels, as interest rates further increase, the value of a put option embedded in a putable bond *most* likely:

    A. Increases at a decreasing rate.

    B. Decreases at an increasing rate.

    C. Increases at an increasing rate.

    Answer: C

    At high yield levels, as interest rates further increase, the difference in the values of a putable bond and the value of the option-free bond increases at an increasing rate. The difference between the value of the option-free bond and the putable bond equals the value of the embedded put option.

16. A callable bond is currently trading at 102.5 per 100 of par. When the government par curve is raised by 25 bps, the value of the bond falls to

100.68, and when it is lowered by 25 bps the value of the bond rises to 104.51. The effective duration of this bond is *closest* to:

A. 3.83

B. 7.47

C. 297.31

Answer: B

EffDur = (104.51 – 100.68) / (2 × 0.0025 × 102.5) = 7.47

Use the following information to answer Question 17 and 18:

Consider a 5-year, annual-pay bond with a par value of \$2.5 million. The bond has a modified duration of 4.25 and a full price of 102.55 per 100 of par.

17. The money duration of the bond in terms of the actual size of the position is *closest* to:

A. \$2,563,750

B. \$10,625,000

C. \$10,895,937.50

Answer: C

Money duration in terms of the actual size of the position is calculated as:

MoneyDur (in terms of actual size) = AnnModDur × PV^{Full}
= 4.25 × \$2,500,000 × 1.0255 = \$10,895,937.5

18. The impact of a 50 bps increase in yield-to-maturity on the dollar value would *most* likely be:

A. The value of the position would increase by \$54,479.69.

B. The value of the position would fall by \$54,479.69.

C. No change in Money duration as it has not impacted the change in yields.

Answer: B

If there were a 50 bps increase in yield-to-maturity, the change in the value of the overall position (in terms of dollars) would be calculated as:

$\$10,895,937.5 \times 0.005 = \$54,479.69$

The value of the position would fall by $54,479.69 if yields were to rise by 50 basis points.

19. Consider a newly-issued 5-year, 7% annual-pay bond that is priced at 96 per 100 of par to yield 8%. The price value of a basis point for this bond per 100 of par is *closest* to:

    A. $0.02

    B. $0.04

    C. $0.08

    Answer: B

    PV_+ can be calculated as:

    N = 5; FV = 100; PMT = 7; I/Y = 8.01; CPT PV; PV = $95.97

    PV_- can be calculated as:

    N = 5; FV = 100; PMT = 7; I/Y = 7.99; CPT PV; PV = $96.05

    The price value of a basis point can be computed as:

    $$PVBP = (96.05 - 95.97) / 2 = \$0.04 \text{ per 100 of par value}$$

Use the following to answer Question 20 and 21:

Consider the following information regarding a bond with a par value of $100:

- Initial YTM = 6%
- $PV_0 = \$101.7893$
- Change in yields = 0.0005
- $PV_+ = \$101.52$
- $PV_- = \$102.06$
- ApproxModDur = 5.36

20. The approximate convexity of the bond is *closest* to:

A. 5.36

B. 50.15

C. 55.02

Answer: C

ApproxCon = [102.06 + 101.52 – (2 × 101.7893)] / [$(0.0005)^2$ × 101.7893]
ApproxCon = **55.02**

21. The estimated percentage price change resulting from a 100 bps increase in the yield-to-maturity is *closest* to:

A. 4.81%

B. 5.085%

C. 5.635%

Answer: B

$\%\Delta PV^{Full} \approx (-5.36 \times 0.01) + [(1/2) \times 55.02 \times (0.01)^2]$
$\%\Delta PV^{Full} = -0.0536 + 0.002751$
$\%\Delta PV^{Full} = -0.05085$ or **−5.085%**

22. Given a nonparallel shift in the yield curve, yield curve risk for a bond is *most* likely measured using:

A. Effective duration.

B. Modified duration.

C. Key rate duration.

Answer: C

Key rate duration is used to assess shaping or yield curve risk for a bond; i.e., the bond's sensitivity to changes in the shape of the benchmark yield curve, or nonparallel, shifts in the yield curve.

Reading 56: Fundamentals of Credit Analysis

1. Consider the following statements:

   Statement 1: The greater the expected recovery rate, the lower the default risk of a bond.

   Statement 2: All other factors remaining the same, the lower the credit quality of the issuer and the lower the amount of publicly traded debt the issuer has outstanding, the greater the spread risk.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct

   B. Only Statement 2 is correct

   C. Both statements are correct

2. Which of the following classes of bondholders would *most likely* have the highest ranking in the priority of claims?

   A. First lien

   B. Senior secured

   C. Junior secured

3. Which of the following classes of bondholders would *most likely* have the highest ranking in the priority of claims?

   A. Senior unsecured

   B. Subordinated debt

   C. Junior secured

4. The corporate family rating is *most likely* based on the issuer's:

   A. Senior unsecured debt.

   B. Senior secured debt.

   C. Junior secured debt.

5. Consider the following statements:

Statement 1: A cross default provision implies that the expected loss for all the different issues of a particular company is the same.

Statement 2: Bonds ranking pari passu in right of payment means that bonds that are at the same level in the capital structure are treated as one class in recovery distributions regardless of their maturity and coupon rates.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only one statement is incorrect.

C. Both statements are incorrect.

6. Consider the following statements:

Statement 1: A bond rated BB- or higher is an investment grade bond.

Statement 2: A bond rated CCC- is a high yield bond.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

7. Consider the following statements:

Statement 1: A larger notching adjustment is applied for more risky issuers because the probability of default is higher.

Statement 2: Credit ratings primarily focus on the expected loss, while market prices primarily focus on the risk of default.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

8. Consider the following statements:

Statement 1: Generally speaking, cyclical industries entail greater credit risk than non-cyclical industries.

Statement 2: Generally speaking higher barriers to entry lower the credit risk of industry participants.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

9. Consider the following statements:

Statement 1: Covenants tend to offer stronger protection for investment grade bondholders than for high-yield investors.

Statement 2: Covenants tend to be stronger for bonds that are issued in weak economic times than for bonds issues during economic expansions.

Which of the following is *most likely*?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

10. A high value for which of the following ratios *most likely* implies lower credit risk?

A. Debt-capital

B. Debt-EBITDA

C. FFO-Debt

11. Yield spreads on corporate bonds are *least likely* affected by:

A. The expected inflation rate.

B. Broader economic conditions.

C. Financial market performance.

12. Investors in high quality corporate bonds are *most likely* concerned with:

A. Spread risk

B. The strength of covenants in the bond indenture

C. Notching adjustments applied to a particular bond issue

13. Consider the following statements:

Statement 1: Credit curves generally tend to be downward-sloping.

Statement 2: The yield spread is composed of a liquidity premium, maturity premium and the credit spread.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

14. Which of the following is *most likely* the weakest source of liquidity for a high yield issuer?

A. Working capital

B. Operating cash flow

C. Asset sales

15. Consider the following statements:

Statement 1: Bank debt typically tends to be senior and relatively short term.

Statement 2: A company whose capital structure is relatively "top heavy" has relatively more unsecured debt, which makes it more difficult for it to take on more bank debt in times of distress.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

16. Consider the following statements:

Statement 1: Credit ratings on local currency sovereign bonds typically tend to be one or two notches above ratings for foreign currency bonds.

Statement 2: For a given issuer, a large difference between the EV/EBITDA and debt/EBITDA ratios indicates higher credit risk.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

17. A 10-year corporate bond with a coupon rate of 5% is currently trading at $103.45. Improvement in economic conditions has caused the yield spread on the bond to narrow by 200 basis points. Given a modified duration of 6.2 and a convexity of 0.725, the return impact on the bond is *closest to*:

A. −10.95%

B. 12.41%

C. 13.85%

Use the following information to answer Questions 18 and 19:

An analyst gathered the following information regarding three companies, Alpha, Beta, and Gamma:

$ ’000	**Alpha**	**Beta**	**Gamma**
Cash	1,215	3,260	2,458
Interest expense	625	1,560	1,155
EBITDA	1,325	2,805	1,815
Secured debt (bank loan and bonds)	3,920	3,340	2,360
Senior unsecured bonds	1,105	3,125	1,625
Subordinated bonds	150	450	3,625
Total debt	**5,175**	**6,915**	**7,610**

18. Which company has the *highest* senior unsecured leverage?

A. Alpha

B. Beta

C. Gamma

19. Which company has the *lowest* total leverage?

    A. Alpha

    B. Beta

    C. Gamma

20. A recently issued 5-year maturity bond is currently trading at par ($100). An analyst notes that the probability of default on the bond is 30%, and if default occurs, only 20% of the bond's face value will be recovered. The expected loss on the bond is *closest to*:

    A. 6%

    B. 24%

    C. 14%

Reading 56: Fundamentals of Credit Analysis

1. Consider the following statements:

   Statement 1: The greater the expected recovery rate, the lower the default risk of a bond.

   Statement 2: All other factors remaining the same, the lower the credit quality of the issuer and the lower the amount of publicly traded debt the issuer has outstanding, the greater the spread risk.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct

   B. Only Statement 2 is correct

   C. Both statements are correct

   Answer: B

   The greater the expected recovery rate, the lower the loss severity given default and the lower the expected loss. The recovery rate has no direct relation with the default risk or default probability.

   Low credit quality and low amounts of publicly traded debt outstanding result in higher market liquidity risk, which is a component of spread risk.

2. Which of the following classes of bondholders would *most likely* have the highest ranking in the priority of claims?

   A. First lien

   B. Senior secured

   C. Junior secured

   Answer: A

   First lien or first mortgage (where a specific asset is pledged) has the highest ranking in the priority of claims.

3. Which of the following classes of bondholders would *most likely* have the highest ranking in the priority of claims?

A. Senior unsecured

B. Subordinated debt

C. Junior secured

Answer: C

Secured debtholders (junior secured) have a higher ranking in the priority of claims than unsecured debtholders (senior unsecured and subordinated).

4. The corporate family rating is *most likely* based on the issuer's:

   A. Senior unsecured debt.

   B. Senior secured debt.

   C. Junior secured debt.

   Answer: A

   The corporate family rating reflects the overall creditworthiness of the issuer. It is based on the issuer's **senior unsecured debt**.

5. Consider the following statements:

   Statement 1: A cross default provision implies that the expected loss for all the different issues of a particular company is the same.

   Statement 2: Bonds ranking pari passu in right of payment means that bonds that are at the same level in the capital structure are treated as one class in recovery distributions regardless of their maturity and coupon rates.

   Which of the following is *most likely*?

   A. Both statements are correct.

   B. Only one statement is incorrect.

   C. Both statements are incorrect.

   Answer: B

   A cross default provision implies that the **probability of default** for all the different issues of a particular company is the same.

   Statement 2 is correct.

6. Consider the following statements:

   Statement 1: A bond rated BB- or higher is an investment grade bond.

   Statement 2: A bond rated CCC- is a high yield bond.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are correct.

   Answer: B

   - A bond rated **BBB-** or higher is an investment grade bond.
   - Bonds rated lower than BBB- are high yield bonds.

7. Consider the following statements:

   Statement 1: A larger notching adjustment is applied for more risky issuers because the probability of default is higher.

   Statement 2: Credit ratings primarily focus on the expected loss, while market prices primarily focus on the risk of default.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

   Answer: A

   A larger notching adjustment is applied for more risky issuers. This is because the probability of default is higher for more risky bonds, so the potential difference in loss from a higher or lower seniority ranking is a bigger consideration in assessing the issue's credit risk. For less risky bonds, the probability of default is lower, so there is less of a need for notching ratings to capture any potential differences in loss severity.

   Statement 2 is incorrect. Credit ratings primarily focus on the risk of default, while market prices primarily focus on the expected loss (i.e., default probability times loss severity).

8. Consider the following statements:

   Statement 1: Generally speaking, cyclical industries entail greater credit risk than non-cyclical industries.

   Statement 2: Generally speaking higher barriers to entry lower the credit risk of industry participants.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are correct.

   Answer: C

   Cyclical industries are more sensitive to the performance of the broader economy and tend to have more volatile revenues and cash flows. This results in them having greater credit risk than non-cyclical industries.

   Higher barriers to entry result in more sustainable profits for industry participants, resulting in lower credit risk.

9. Consider the following statements:

   Statement 1: Covenants tend to offer stronger protection for investment grade bondholders than for high-yield investors.

   Statement 2: Covenants tend to be stronger for bonds that are issued in weak economic times than for bonds issues during economic expansions.

   Which of the following is *most likely*?

   A. Only Statement 1 is incorrect.

   B. Only Statement 2 is incorrect.

   C. Both statements are correct.

   Answer: A

   Covenants tend to offer stronger protection for high-yield investors than for investment-grade bondholders. Bondholders cannot act as a syndicate and are typically unable to negotiate strong covenants unless the issuer is desperate. High yield issuers and companies issuing bonds during recessions are usually more willing to accept stronger covenants.

10. A high value for which of the following ratios *most likely* implies lower credit risk?

    A. Debt-capital

    B. Debt-EBITDA

    C. FFO-Debt

    Answer: C

    The higher the FFO-Debt ratio, the lower the credit risk. Higher debt-capital and debt-EBITDA ratios imply higher credit risk.

11. Yield spreads on corporate bonds are *least likely* affected by:

    A. The expected inflation rate.

    B. Broader economic conditions.

    C. Financial market performance.

    Answer: A

    The expected inflation rate is built into the risk-free rate. It does not affect the yield spread that is applied to a corporate bond on top of the risk-free rate.

12. Investors in high quality corporate bonds are *most likely* concerned with:

    A. Spread risk

    B. The strength of covenants in the bond indenture

    C. Notching adjustments applied to a particular bond issue

    Answer: A

    Investors in high-quality (investment grade) bonds are primarily concerned with spread risk. High yield investors are more concerned with the strength of covenants any notching adjustments.

13. Consider the following statements:

Statement 1: Credit curves generally tend to be downward-sloping.

Statement 2: The yield spread is composed of a liquidity premium, maturity premium and the credit spread.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

Spread curves (credit curves) generally tend to be upward sloping to reflect the greater risk of longer maturity bonds.

Yield spread = Liquidity premium + Credit spread.

The maturity premium is built into the risk-free rate.

14. Which of the following is *most* likely the weakest source of liquidity for a high yield issuer?

A. Working capital

B. Operating cash flow

C. Asset sales

Answer: C

Assets sales are the most unreliable source of liquidity for a high yield issuer because both the potential value of assets and the actual time of closing are highly uncertain.

15. Consider the following statements:

Statement 1: Bank debt typically tends to be senior and relatively short term.

Statement 2: A company whose capital structure is relatively "top heavy" has relatively more unsecured debt, which makes it more difficult for it to take on more bank debt in times of distress.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

Bank debt is typically senior, short term and comes with stringent covenants.

A company whose capital structure is relatively "top heavy" has relatively more **secured** debt, which makes it more difficult for it to take on more bank debt in times of distress.

16. Consider the following statements:

Statement 1: Credit ratings on local currency sovereign bonds typically tend to be one or two notches above ratings for foreign currency bonds.

Statement 2: For a given issuer, a large difference between the EV/EBITDA and debt/EBITDA ratios indicates higher credit risk.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

Historically, default rates have been higher on foreign currency bonds than on local currency bonds. Therefore, ratings on local currency bonds tend to be higher.

For a given issuer, a large difference between the EV/EBITDA and debt/EBITDA ratios means there is a relatively large equity cushion, which means **lower** credit risk.

17. A 10-year corporate bond with a coupon rate of 5% is currently trading at $103.45. Improvement in economic conditions has caused the yield spread on the bond to narrow by 200 basis points. Given a modified duration of 6.2 and a convexity of 0.725, the return impact on the bond is *closest to*:

A. −10.95%

B. 12.41%

C. 13.85%

Answer: C

Since modified duration squared equals 38.44, the appropriately scaled convexity equals 72.5.

Return impact ≈ – (MDur × Δspread) + (1/2 × Convexity × ΔSpread^2)

Return impact ≈ – [6.2 × (–0.02)] + [1/2 × 72.5 × (–0.02)^2]

Return impact ≈ 0.1385

Use the following information to answer Questions 18 and 19:

An analyst gathered the following information regarding three companies, Alpha, Beta, and Gamma:

$ '000	**Alpha**	**Beta**	**Gamma**
Cash	1,215	3,260	2,458
Interest expense	625	1,560	1,155
EBITDA	1,325	2,805	1,815
Secured debt (bank loan and bonds)	3,920	3,340	2,360
Senior unsecured bonds	1,105	3,125	1,625
Subordinated bonds	150	450	3,625
Total debt	**5,175**	**6,915**	**7,610**

18. Which company has the *highest* senior unsecured leverage?

A. Alpha

B. Beta

C. Gamma

Answer: A

Senior unsecured leverage = (Secured debt + Senior unsecured debt) / EBITDA

Alpha: (3,920 + 1,105) / 1,325 = **3.79**

Beta: (3,340 + 3,125) / 2,805 = 2.30

Gamma: (2,360 + 1,625) / 1,815 = 2.20

19. Which company has the *lowest* total leverage?

A. Alpha

B. Beta

C. Gamma

Answer: B

Total leverage = Total debt / EBITDA

Alpha: 5,175 / 1,325 = 3.91

Beta: 6,915 / 2,805 = **2.47**

Gamma: 7,610 / 1,815 = 4.19

20. A recently issued 5-year maturity bond is currently trading at par ($100). An analyst notes that the probability of default on the bond is 30%, and if default occurs, only 20% of the bond's face value will be recovered. The expected loss on the bond is *closest to*:

A. 6%

B. 24%

C. 14%

Answer: B

Expected loss = Default probability × Loss severity given default

Loss severity given default = 1 – Recovery rate = 1 – 0.2 = 0.8

Expected loss = 0.3 × 0.8 = 0.24 or **24%**

Derivatives

Reading 57: Derivative Markets and Instruments

1. Which of the following statements regarding exchange traded derivatives is *least likely* correct?

   A. They are liquid.

   B. They carry no credit risk.

   C. They are customized instruments.

2. A put option grants the holder:

   A. The obligation to sell the underlying.

   B. The choice to sell the underlying.

   C. The obligation to buy the underlying.

3. Which of the following is not an example of a forward commitment?

   A. A call option

   B. A futures contract

   C. A swap contract

4. Which of the following is *least* likely an example of a derivative?

   A. An exchange-traded equity fund.

   B. An option on interest rates.

   C. A futures contract on oil.

Reading 57: Derivative Markets and Instruments

1. Which of the following statements regarding exchange traded derivatives is *least likely* correct?

   A. They are liquid.

   B. They carry no credit risk.

   C. They are customized instruments.

   Answer: C

   Exchange-traded derivatives are standardized (not customized) instruments.

2. A put option grants the holder:

   A. The obligation to sell the underlying.

   B. The choice to sell the underlying.

   C. The obligation to buy the underlying.

   Answer: B

   A put option grants the holder the right or the choice to sell the underlying at a given exercise price.

3. Which of the following is not an example of a forward commitment?

   A. A call option

   B. A futures contract

   C. A swap contract

   Answer: A

   An option is an example of a contingent claim, not a forward commitment.

4. Which of the following is *least* likely an example of a derivative?

   A. An exchange-traded equity fund.

B. An option on interest rates.

C. A futures contract on oil.

Answer: A

Strictly speaking, derivatives *transform* the performance of the underlying asset before paying out in the derivatives transaction. Mutual funds and exchange-traded funds simply *pass* on the returns on their underlying securities, so they are not derivatives.

Reading 58: Basics of Derivative Pricing and Valuation

1. Which of the following is *least* likely regarding forward contracts?
   A. No cash is exchanged at inception.
   B. They are priced to have zero value at inception.
   C. There is no counterparty credit risk.
2. Consider the following statements:

   Statement 1: Forward contracts are primarily used for speculation on asset prices.

   Statement 2: Deliverable forward contracts entail no counterparty credit risk.

   Which of the following is *most* likely?
   A. Both statements are correct.
   B. Only one statement is correct.
   C. Both statements are incorrect.
3. Which of the following is *least* likely to be similar between forward markets and futures markets?
   A. They are priced to have zero value at inception to both parties.
   B. They both can be cash-settled or deliverable.
   C. They both trade on organized exchanges.
4. Which of the following is *least* likely a feature of futures markets and contracts?
   A. Futures markets are regulated.
   B. The Fed guarantees all futures contracts.
   C. Futures contracts are standardized.
5. Which of the following is *most* likely to be determined by the

counterparties in a futures contract?

A. Price.

B. The underlying.

C. Contract size.

Use the following information to answer Questions 6 to 11:

Alfred takes the short position on 10 oil futures contracts at a futures price of $75 per barrel. Each contract is on 1,000 barrels of oil. Settlement prices on the next 4 days are given as follows:

	Day	Price
1	$75.50	
2	$79	
3	$77	
4	$75	

The exchange enforces an initial margin requirement of 10% and a maintenance margin of 5%.

6. The value of each contract at inception is *closest* to:

   A. $75,000

   B. $75,500

   C. $75

7. The minimum amount that Alfred must deposit in his futures margin account to take his desired position is *closest* to:

   A. $75,000

   B. $37,500

   C. $750,000

8. The maximum amount that Alfred can withdraw from his futures margin account at the end of Day 2 and keep his position open at the same time is *closest* to: (Assume that he deposited the minimum amount required at contract inception and did not deposit any more money into his account.)

A. Zero

B. $10,000

C. $5,000

9. If Alfred closes out his position at the end of Day 3, the total amount of money in his account would be *closest* to:

   A. $55,000

   B. $97,500

   C. $95,000

10. Assuming that Alfred withdraws no money from his account, meets all margin calls, and closes his position at the end of Day 4, the balance in his account would be *closest* to:

    A. $75,000

    B. $115,000

    C. $77,500

11. Assuming that Alfred withdraws the entire excess margin from his account at the end of Day 3, the balance in his account at the end of Day 4 is *closest* to:

    A. $115,000

    B. $75,000

    C. $95,000

12. Consider the following statements

    Statement 1: The clearinghouse takes the position of the seller on every contract traded on a futures exchange.

    Statement 2: The exchange sets the maximum daily price change limits in the futures market.

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Only Statement 1 is correct.

    C. Only Statement 2 is correct.

13. Which of the following statements regarding futures markets is *least* likely?

   A. Futures markets are regulated.

   B. Futures contracts are customized instruments.

   C. The clearinghouse is the counterparty to every trade on a futures exchange.

Use the following information to answer Questions 14 to 26:

Current market price of ABC stock = $77

ABC stock price after 30 days = $80

ABC stock price after 45 days = $95

ABC stock price after 60 days = $80

ABC stock price after 75 days = $85

ABC stock price after 90 days = $70

Current price of European call on ABC with exercise price of $93 with 90 days to expiration = $2

Current price of European put on ABC with exercise price of $82 with 60 days to expiration = $6

Risk-free rate = 5%

14. The payoff to the put option holder on Day 30 is *closest* to:

   A. Zero

   B. $2

   C. -$2

15. The payoff to the call option holder on Day 90 is *closest* to:

   A. Zero

   B. $23

   C. $21

16. The payoff to the put option writer on Day 60 is *closest* to:

   A. Zero

B. −$2

C. $4

17. The payoff to the call option writer on Day 90 is *closest* to:

A. Zero

B. $23

C. −$21

18. The put option holder's profit on his position is *closest* to:

A. −$6

B. $2

C. −$4

19. The call option holder's profit on his overall position is *closest* to:

A. Zero

B. $21

C. −$2

20. At current prices, the call option is *most* likely:

A. In-the-money.

B. At-the-money.

C. Out-of-the-money.

21. At t = 30, the put option is *most* likely:

A. In-the-money.

B. At-the-money.

C. Out-of-the-money.

22. Most of the call option premium is *most* likely composed of:

A. Exercise value.

B. Time value.

C. Cannot be determined.

23. Most of the put option premium is *most* likely composed of:

A. Exercise value.

B. Time value.

C. Cannot be determined.

24. The price of a European call option with an exercise price of $82 and 60 days remaining till expiration would be *closest* to:

A. $1.33

B. $1.66

C. $1.03

25. At t = 45, the minimum value of the call option is *closest* to:

A. $2.56

B. $2

C. $0

26. At t = 45, the minimum value of the put option is *closest* to:

A. $0

B. $13

C. $13.16

27. Consider the following statements:

Statement 1: The higher the exercise price, the higher the intrinsic value of a call option.

Statement 2: The higher the exercise price, the higher the intrinsic value of a put option.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

28. Which of the following is *least* likely a requirement for put-call parity to hold?

A. The call option, the put option, and the bond must have the same time till expiration/maturity.

B. The exercise price of the call and the put option must be the same as the face value of the bond.

C. The options must both be American options; i.e., they can only be exercised at expiration.

29. A synthetic put can *most* likely be constructed by:

A. Going short on the call, long on the underlying, and short on the bond.

B. Going short on the call, short on the underlying asset, and long on the bond.

C. Going long on the call, short on the underlying asset, and long on the bond.

30. Consider the following statements:

Statement 1: The lower bound for the value of an American call option equals its intrinsic value as a payoff equal to its intrinsic value that can be realized by exercising the option immediately.

Statement 2: The value of a put option is directly related to the value of the underlying.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

31. Early exercise of an American call option is *most* likely when:

A. It is at-the-money.

B. The dividend payment on the stock will reduce the value of the underlying stock below the exercise price.

C. The underlying stock is of a company that is at or nearing bankruptcy.

32. Which of the following options will *least* likely increase in value with a longer term to expiration?

A. American call.

B. European put.

C. European call.

33. For options on stocks, an increase in interest rates *most* likely:

    A. Increases the prices of call options and put options.

    B. Increases the price of call options, but decreases the price of put options.

    C. Increases the price of put options, but decreases the price of call options.

34. For options on stocks, an increase in stock price volatility will *least* likely:

    A. Increase the price of call options.

    B. Increase the price of put options.

    C. Decrease the price of call options.

Use the following information to answer Questions 35 to 37:

A European put option with an exercise price of $100 and 3 months till maturity is trading at $4 when the underlying stock is trading at $97. The risk-free rate equals 5%.

35. All other factors remaining the same, the value of a fiduciary call *most* likely:

    A. Cannot be determined given the information.

    B. Equals $101.

    C. Equals $1.

36. All other factors remaining the same, the value of a European call *most* likely:

    A. Cannot be determined given the information.

    B. Is $1.

    C. Is $2.21.

37. All other factors remaining the same, the value of an American put

option is *least* likely:

A. $3

B. $4

C. $4.05

Use the following information to answer Questions 38 to 42:

ABC Company's current stock price is $100.

The risk-free rate is 4%.

38. The payoff to the holder of a call option on ABC with an exercise price of $200 is *closest* to:

    A. $100 if stock price at option expiration equals $200.

    B. Zero if stock price at option expiration equals $100.

    C. –$40 if stock price at option expiration equals $160.

39. The payoff to the holder of a put option on ABC with an exercise price of $200 is *closest* to:

    A. $100 if stock price at option expiration equals $200.

    B. Zero if stock price at option expiration equals $100.

    C. $40 if stock price at option expiration equals $160.

40. Consider a scenario where Annie writes a put option on ABC with an exercise price of $225. If ABC stock price at option expiration equals $125, Annie will *most* likely:

    A. Exercise the option.

    B. Have a negative payoff of $100.

    C. Let the option expire without exercising it.

41. Consider a scenario where Arthur writes a call option on ABC with an exercise price of $225. If ABC stock price at option expiration equals $215, Arthur will *most* likely:

    A. Exercise the option.

    B. Have a payoff of zero.

    C. Let the option expire without exercising it.

42. The minimum value of an American call option with an exercise price of $80 and 6 months till expiration is *closest* to:

    A. $20

    B. $100

    C. $21.55

43. The best-case scenario for the writer of a put option *most* likely occurs when:

    A. The stock's price falls to zero.

    B. The stock's price rises above the option's strike price.

    C. The payoff equals the put premium.

44. Samantha would like to replicate the payoffs on a put option. A put option is not available in the market. Samantha can replicate the payoffs on her desired put position by:

    A. Purchasing a call and a zero coupon bond, and selling the underlying stock.

    B. Selling a call and the underlying stock, and purchasing a zero coupon bond.

    C. Purchasing a call and the underlying stock, and selling a zero coupon bond.

45. Consider the following statements:

    Statement 1: Calls and put prices increase as a result of an increase in interest rate volatility.

    Statement 2: There is never a good reason to exercise an American put option prior to expiration.

    Which of the following is *most* likely?

    A. Both statements are correct.

    B. Statement 1 is the only correct statement.

    C. Both statements are incorrect.

Use the following information to answer Questions 46 to 50:

Capital One Bank enters into a $10,000,000 quarterly-pay plain-vanilla interest rate swap as the fixed-rate payer at a swap rate of 6% based on a 360-day year. The floating-rate payer, First Bank, agrees to make payments at 90-day LIBOR plus a 0.6% margin. 90-day LIBOR currently stands at 4%. LIBOR-90 rates are as follows:

90 days from today = 4.5%

180 days from today = 5.1%

270 days from today = 5.6%

360 days from today = 6.0%

46. Which of the following statements regarding the payments made at the inception of the swap is *most* likely?

    A. Capital One Bank will pay First Bank $10 million.

    B. First Bank will pay Capital One Bank $10 million.

    C. No amount will be exchanged at the inception of the swap.

47. The floating rate used to determine the settlement payment 90 days from today is *closest* to:

    A. 4.5%

    B. 5.1%

    C. 4.6%

48. After 180 days, First Bank will *most* likely:

    A. Pay $7,500.

    B. Receive $37,500.

    C. Receive $22,500.

49. After 270 days, Capital One Bank will *most* likely:

    A. Pay $7,500.

    B. Receive $22,500.

    C. Receive $5,000.

50. After 360 days, First Bank will *most* likely:

    A. Pay $10,000.

B. Pay $15,000.

C. Pay $5,000.

51. The fixed-rate payer on a plain-vanilla interest rate swap will *most* likely receive a payment on a settlement date if the swap fixed rate:

    A. Is greater than the floating rate on the settlement date.

    B. Is lower than the floating rate on the settlement date.

    C. Was lower than the floating rate on the previous settlement date.

52. Consider the following statements:

    Statement 1: In computing the spot price of an asset, the present value of the cost of carry is computed using a discount rate that includes a risk premium.

    Statement 2: The greater the cost of holding an asset, the higher its spot price.

    Which of the following is *most* likely?

    A. Both statements are correct.

    B. Only one statement is correct.

    C. Both statements are incorrect.

53. Consider the following statements regarding the valuation of derivative securities:

    Statement 1: The expected value of the payoff is computed using risk-neutral probabilities.

    Statement 2: The present value of the expected payoff is computed using the risk-free rate.

    Which if the following is *most* likely?

    A. Both statements are correct.

    B. Only one statement is correct.

    C. Both statements are incorrect.

54. Consider the following statements regarding the valuation of derivative securities:

Statement 1: The price of a forward contract changes in response to changes in the value of the underlying.

Statement 2: A forward contract gives rise to obligations for both counterparties to the contract.

Which if the following is *most* likely?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Use the following information to answer Questions 55 to 58:

Walter White owns an asset worth $150, which he plans to sell in 6 months. To hedge against the possible decline in the price of an asset, he decides to take the short position in a forward contract on the asset. The risk-free rate is given as 5.925%.

55. The no-arbitrage forward price of the contract is *closest* to:

A. $150

B. $154.38

C. $158.89

56. Given that 3 months into the term of the contract the spot price of the underlying is $145.45, the value of the short position is *closest* to:

A. -$6.72

B. -$11.17

C. $6.72

57. Given that 5 months into the term of the contract the spot price of the underlying is $158.55, the value of the short position is *closest* to:

A. −$4.91

B. $7.83

C. −$7.83

58. Given that at contract maturity the spot price of the underlying asset is

actually $140, the value of the short position at expiration is *closest* to:

A. −$14.38

B. $18.89

C. $14.38

Use the following information to answer Questions 59 and 60:

Bill Prady wishes to purchase a security in 9 months that is currently worth $95. To hedge against a possible increase in price, he decides to take the long position on a forward contract on the security that expires in 9 months. The risk-free rate is given as 4%.

59. The no-arbitrage forward price of the contract is *closest* to:

A. $98.80

B. $97.84

C. $95.94

60. Given that 5 months into the term of the contract the spot price of the underlying is $96, the value of the long position is *closest* to:

A. −$0.57

B. −$0.28

C. $0.28

61. Consider the following statements:

Statement 1: The greater the benefits of holding the underlying asset, the lower the price of the forward contract relative to the spot price.

Statement 2: The long position benefits if the market interest rate at FRA expiration is greater than the FRA rate.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

62. Consider the following statements:

Statement 1: All other things remaining the same, if the price of the underlying asset is negatively correlated with interest rates, traders who would like to go long on the underlying would most likely prefer futures to forwards.

Statement 2: All other things remaining the same, if futures prices are uncorrelated with interest rates, forward and futures would have the same prices.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

63. Consider the following statements:

Statement 1: If interest rates rise after swap initiation, the swap will be an asset to the floating-rate payer and a liability for the fixed-rate payer.

Statement 2: An option is in-the-money when its exercise value is greater than zero.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Use the following information to answer Questions 64 to 67:

A stock that is currently trading at $80 can go up 26% or down 20% over the coming year. A call option on the stock that expires in one year and has an exercise price of $87 is currently selling for $9. The risk-free rate is 8%.

64. If the stock price goes up 26% over the period, the intrinsic value of the call option is *closest* to:

A. $0

B. $9

C. $13.8

65. If the stock price goes down 20% over the period, the intrinsic value of the call option is *closest to*:

A. $0

B. $9

C. $13.80

66. The risk-neutral probabilities of up and down moves in the binomial model are *closest* to:

	π	$1-\pi$
A.	0.4348	0.5652
B.	0.6087	0.3913
C.	0.8302	0.1698

67. The value of the call option today is *closest* to:

A. 7.78

B. 9.0

C. 10.61

68. Consider the following statements:

Statement 1: All other things remaining the same, a European call option on a stock can never be worth more than an American call option on the stock.

Statement 2: All other things remaining the same, a European put option on a stock can never be worth more than an American put option on the stock.

Which of the following is *most* likely?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

69. An increase in the price of both call and put options on stocks will *least* likely be caused by:

A. An increase in volatility.

B. An increase in the risk-free rate.

C. An increase in time to expiration.

70. A protective put with a forward contract is *least* likely to include:

A. A long position on a forward contract on the underlying stock.

B. A risk-free bond that has a face value equal to the forward price.

C. A European call option on the underlying stock.

71. Which of the following is *least* likely when replicating the pay-fixed side of a swap through a series of forward contracts?

A. The investor must take a long position on each of the forward contracts.

B. One forward contract should expire at each reset date.

C. Since each forward contract expires at a different point in time, the contracts can have different prices.

Reading 58: Basics of Derivative Pricing and Valuation

1. Which of the following is *least* likely regarding forward contracts?

   A. No cash is exchanged at inception.

   B. They are priced to have zero value at inception.

   C. There is no counterparty credit risk.

   Answer: C

   Forward contracts are not guaranteed. There is always the risk that the party adversely affected by a price change may not fulfill its obligations.

2. Consider the following statements:

   Statement 1: Forward contracts are primarily used for speculation on asset prices.

   Statement 2: Deliverable forward contracts entail no counterparty credit risk.

   Which of the following is *most* likely?

   A. Both statements are correct.

   B. Only one statement is correct.

   C. Both statements are incorrect.

   Answer: C

   Forward contracts are usually used to hedge a preexisting risk. Their primary use is not to speculate on asset prices.

   Both deliverable and cash-settled forward contracts entail exposure to counterparty credit risk.

3. Which of the following is *least* likely to be similar between forward markets and futures markets?

   A. They are priced to have zero value at inception to both parties.

B. They both can be cash-settled or deliverable.

C. They both trade on organized exchanges.

Answer: C

Forward contracts are OTC (over-the-counter) instruments, while futures trade on organized exchanges.

4. Which of the following is *least* likely a feature of futures markets and contracts?

   A. Futures markets are regulated.

   B. The Fed guarantees all futures contracts.

   C. Futures contracts are standardized.

   Answer: B

   The clearinghouse, not the Fed, guarantees futures contracts.

5. Which of the following is *most* likely to be determined by the counterparties in a futures contract?

   A. Price.

   B. The underlying.

   C. Contract size.

   Answer: A

   In a futures contract, only the price is determined by the two parties. All other terms including the contract's expiration date, size, the underlying, and mode of settlement are determined by the exchange.

Use the following information to answer Questions 6 to 11:

Alfred takes the short position on 10 oil futures contracts at a futures price of $75 per barrel. Each contract is on 1,000 barrels of oil. Settlement prices on the next 4 days are given as follows:

	Day	Price
1	$75.50	
2	$79	
3	$77	

4	$75

The exchange enforces an initial margin requirement of 10% and a maintenance margin of 5%.

6. The value of each contract at inception is *closest* to:

   A. $75,000

   B. $75,500

   C. $75

   Answer: A

   The total value of each contract equals $75/barrel × 1,000 barrels = $75,000.

7. The minimum amount that Alfred must deposit in his futures margin account to take his desired position is *closest* to:

   A. $75,000

   B. $37,500

   C. $750,000

   Answer: A

   Initial margin per contract = 0.1 × $75 × 1,000 = $7,500

   Margin requirement for 10 contracts = $7,500 × 10 = $75,000

8. The maximum amount that Alfred can withdraw from his futures margin account at the end of Day 2 and keep his position open at the same time is *closest* to: (Assume that he deposited the minimum amount required at contract inception and did not deposit any more money into his account.)

   A. Zero

   B. $10,000

   C. $5,000

   Answer: A

   Alfred is short on these contracts. The price has moved up (adverse price movement), which implies that he has built up losses in his account and does not have excess funds to withdraw. The only way he can withdraw money is if he closes out his position.

Day	Funds Deposited	Price Change	Gain/Loss	Value
0	75,000	0	0	75,000
1	0	−1	−5,000	70,000
2	0	−3.5	−35,000	35,000
3	40,000	2	20,000	95,000
4	0	2	20,000	115,000

9. If Alfred closes out his position at the end of Day 3, the total amount of money in his account would be *closest* to:

   A. $55,000

   B. $97,500

   C. $95,000

   Answer: C

   The change in oil prices on Day 2 would result in the maintenance margin requirement being breached (at $78.75—a 5% increase from the initial futures price of $75). Alfred would be required to restore the initial margin (at $75,000) at the end of Day 2 (by depositing another $40,000). His account balance after the favorable price movement on Day 3 would equal $35,000 + $40,000 + $20,000 = $95,000.

10. Assuming that Alfred withdraws no money from his account, meets all margin calls, and closes his position at the end of Day 4, the balance in his account would be *closest* to:

    A. $75,000

    B. $115,000

    C. $77,500

    Answer: B

    On Day 4, the balance in Alfred's account increases by $20,000 taking his overall balance to $115,000, assuming that he does not withdraw any excess margin.

11. Assuming that Alfred withdraws the entire excess margin from his account at the end of Day 3, the balance in his account at the end of Day 4 is *closest* to:

    A. $115,000

    B. $75,000

    C. $95,000

    Answer: C

    Alfred can withdraw $20,000 from his account at the end of Day 3 ($95,000 – $75,000). If he withdraws this amount, the balance in his account at the end of Day 4 would equal $75,000 (initial margin) plus $20,000 (mark-to-market adjustment of Day 4).

12. Consider the following statements

    Statement 1: The clearinghouse takes the position of the seller on every contract traded on a futures exchange.

    Statement 2: The exchange sets the maximum daily price change limits in the futures market.

    Which of the following is *most likely*?

    A. Both statements are correct.

    B. Only Statement 1 is correct.

    C. Only Statement 2 is correct.

    Answer: C

    The clearinghouse takes the position as the seller (short) for every long position and the buyer (long) for every short position on the exchange.

13. Which of the following statements regarding futures markets is *least* likely?

    A. Futures markets are regulated.

    B. Futures contracts are customized instruments.

    C. The clearinghouse is the counterparty to every trade on a futures exchange.

    Answer: B

Futures contracts are standardized (not customized) instruments.

Use the following information to answer Questions 14 to 26:

Current market price of ABC stock = $77

ABC stock price after 30 days = $80

ABC stock price after 45 days = $95

ABC stock price after 60 days = $80

ABC stock price after 75 days = $85

ABC stock price after 90 days = $70

Current price of European call on ABC with exercise price of $93 with 90 days to expiration = $2

Current price of European put on ABC with exercise price of $82 with 60 days to expiration = $6

Risk-free rate = 5%

14. The payoff to the put option holder on Day 30 is *closest* to:

    A. Zero

    B. $2

    C. -$2

    Answer: A

    The put option expires on Day 60. Since it is a European put, it cannot be exercised on Day 30. Therefore, there is no payoff on Day 30.

15. The payoff to the call option holder on Day 90 is *closest* to:

    A. Zero

    B. $23

    C. $21

    Answer: A

    Since the stock price at option expiration ($70) is lower than the exercise price of the call option ($93), the option holder will not exercise his option. Therefore, the payoff will equal zero.

16. The payoff to the put option writer on Day 60 is *closest* to:

    A. Zero

    B. −$2

    C. $4

    Answer: B

    On Day 60 (the expiration date of the put option) the stock price ($80) is lower than the exercise price of the put ($82). Therefore, the put option holder will choose to exercise his option, and the payoff to the option writer will equal −$2.

17. The payoff to the call option writer on Day 90 is *closest* to:

    A. Zero

    B. $23

    C. −$21

    Answer: A

    The stock price at option expiration ($70) is lower than the exercise price of the option ($93). The call option holder will choose not to exercise his option, which would leave the call option writer with a zero payoff.

18. The put option holder's profit on his position is *closest* to:

    A. −$6

    B. $2

    C. −$4

    Answer: C

    The put option holder will exercise his option and receive a payoff of $2 (exercise price minus stock price at option expiration). However, since the cost of the put was $6, the option holder makes a loss of $4 on his overall position.

19. The call option holder's profit on his overall position is *closest* to:

    A. Zero

B. $21

C. −$2

Answer: C

The call option holder will not exercise his option, as the exercise price is greater than the stock price at option expiration. The option holder makes a loss of $2 (the call option premium) on his overall position.

20. At current prices, the call option is *most* likely:

A. In-the-money.

B. At-the-money.

C. Out-of-the-money.

Answer: C

The current stock price equals $77, while the call option's strike price is $93. This option is out-of-the money, as immediate exercise (if possible) would result in a negative payoff for the option holder.

21. At t = 30, the put option is *most* likely:

A. In-the-money.

B. At-the-money.

C. Out-of-the-money.

Answer: A

The current stock price equals $80, while the put option's strike price is $82. This option is in-the-money, as immediate exercise (if possible) would result in a positive payoff for the option holder.

22. Most of the call option premium is *most* likely composed of:

A. Exercise value.

B. Time value.

C. Cannot be determined.

Answer: B

Since the call option is currently out-of-the-money, most of its value must be composed of time value.

23. Most of the put option premium is *most* likely composed of:

A. Exercise value.

B. Time value.

C. Cannot be determined.

Answer: A

Since the put option is currently in-the-money (intrinsic value = $5), most of its value is composed of intrinsic value.

24. The price of a European call option with an exercise price of $82 and 60 days remaining till expiration would be *closest* to:

A. $1.33

B. $1.66

C. $1.03

Answer: B

Using put call parity, the price of the European call can be determined as:

$C = \$6 + \$77 - \$82/(1 + 0.05)^{60/365} = \$1.655$

25. At t = 45, the minimum value of the call option is *closest* to:

A. $2.56

B. $2

C. $0

Answer: A

The lower bound for the value of a European call option is calculated as $\text{Max}\ [0, S_t - X/(1 + RFR)^T]$.

Minimum value = $\text{Max}\ [0, 95 - 93/(1 + 0.05)^{45/365}] = \$2.558$

26. At t = 45, the minimum value of the put option is *closest* to:

A. $0

B. $13

C. \$13.16

Answer: A

The lower bound for the value of a European put option is calculated as Max [0, $X/(1 + RFR)^T - S_t$].

Minimum value = Max [0, $82/(1 + 0.05)^{15/365} - 95$] = 0

27. Consider the following statements:

Statement 1: The higher the exercise price, the higher the intrinsic value of a call option.

Statement 2: The higher the exercise price, the higher the intrinsic value of a put option.

Which of the following is *most likely*?

A. Both statements are correct.

B. Only Statement 1 is correct.

C. Only Statement 2 is correct.

Answer: C

You would pay more for the option to purchase the stock for less. Therefore, the higher the exercise price, the **lower** the value of a call option.

28. Which of the following is *least* likely a requirement for put-call parity to hold?

A. The call option, the put option, and the bond must have the same time till expiration/maturity.

B. The exercise price of the call and the put option must be the same as the face value of the bond.

C. The options must both be American options; i.e., they can only be exercised at expiration.

Answer: C

European options can only be exercised at expiration. Put-call parity assumes that the call and the put are both European options.

29. A synthetic put can *most* likely be constructed by:

A. Going short on the call, long on the underlying, and short on the bond.

B. Going short on the call, short on the underlying asset, and long on the bond.

C. Going long on the call, short on the underlying asset, and long on the bond.

Answer: C

Rearranging put-call parity to make "P" the subject, a synthetic put can be constructed by going long on the call, short on the underlying asset, and long on the bond.

30. Consider the following statements:

Statement 1: The lower bound for the value of an American call option equals its intrinsic value as a payoff equal to its intrinsic value that can be realized by exercising the option immediately.

Statement 2: The value of a put option is directly related to the value of the underlying.

Which of the following is *most likely*?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: C

While it is true that a payoff equal to the intrinsic value of an American call option can be realized by exercising it immediately, the lower bound of the American call does not equal its intrinsic value, Max $(0, S_t - X)$. This is because an American option must be worth at least as much as a European call and the lower bound for the value of a European call equals Max $[0, S_t - X/(1 + RFR)^T]$. Therefore, the lower bound of the American call option equals Max $[0, S_t - X/(1 + RFR)^T]$, not Max $(0, S_t - X)$.

A put option grants the holder the right to sell the underlying for a predetermined exercise price. The lower (greater) the value of the underlying, the greater (lower) the exercise value of the put option, and the greater its price/value. Therefore, the value of a put option is *inversely* related to the value of the underlying.

31. Early exercise of an American call option is *most* likely when:

A. It is at-the-money.

B. The dividend payment on the stock will reduce the value of the underlying stock below the exercise price.

C. The underlying stock is of a company that is at or nearing bankruptcy.

Answer: B

- The American call option would be exercised early in this case to take advantage of its (temporary) in-the-money status if it is nearing expiration.
- There is no point in exercising an option that is at-the-money.
- If the underlying stock is at or nearing bankruptcy, an American put on the stock may be exercised early.

32. Which of the following options will *least* likely increase in value with a longer term to expiration?

A. American call.

B. European put.

C. European call.

Answer: B

A put option holder suffers from a subtle penalty from additional time in that she is awaiting a cash inflow (equal to the exercise price) from sale of the underlying. The longer she has to wait, the lower the present value of this receipt. Further, the higher the risk-free rate and the higher the value of the payoff (excess of the exercise price over the price of the underlying), the greater the negative effect of a longer time to expiration.

33. For options on stocks, an increase in interest rates *most* likely:

A. Increases the prices of call options and put options.

B. Increases the price of call options, but decreases the price of put options.

C. Increases the price of put options, but decreases the price of call options.

Answer: B

An increase in interest rate increases the price of call options, but decreases the price of put options.

34. For options on stocks, an increase in stock price volatility will *least* likely:

A. Increase the price of call options.

B. Increase the price of put options.

C. Decrease the price of call options.

Answer: C

An increase in volatility of the underlying increases the price of both call and put options.

Use the following information to answer Questions 35 to 37:

A European put option with an exercise price of $100 and 3 months till maturity is trading at $4 when the underlying stock is trading at $97. The risk-free rate equals 5%.

35. All other factors remaining the same, the value of a fiduciary call *most* likely:

A. Cannot be determined given the information.

B. Equals $101.

C. Equals $1.

Answer: B

A fiduciary call is composed of a call option and the zero coupon riskless bond used in deriving put-call parity.

Using put-call parity:

$C + X/(1 + RFR)^T = \$4 + \$97 = \$101$

36. All other factors remaining the same, the value of a European call *most* likely:

    A. Cannot be determined given the information.

    B. Is $1.

    C. Is $2.21.

    Answer: C

    Using put-call parity:

    $C = \$4 + \$97 - \$100/(1 + 0.05)^{3/12} = \$2.212$

37. All other factors remaining the same, the value of an American put option is *least* likely:

    A. $3

    B. $4

    C. $4.05

    Answer: A

    An American put option must be worth at least as much as the European put option. Therefore, it cannot be worth less than $4.

Use the following information to answer Questions 38 to 42:

ABC Company's current stock price is $100.

The risk-free rate is 4%.

38. The payoff to the holder of a call option on ABC with an exercise price of $200 is *closest* to:

    A. $100 if stock price at option expiration equals $200.

    B. Zero if stock price at option expiration equals $100.

    C. −$40 if stock price at option expiration equals $160.

    Answer: B

    If stock price at option expiration equals $200, the payoff for a call option holder equals zero. If stock price at option expiration equals $100, the payoff equals zero, as the call expires out-of-the-money. There cannot be a negative payoff for an option holder.

39. The payoff to the holder of a put option on ABC with an exercise price of $200 is *closest* to:

    A. $100 if stock price at option expiration equals $200.

    B. Zero if stock price at option expiration equals $100.

    C. $40 if stock price at option expiration equals $160.

    Answer: C

    If stock price at option expiration equals $200, the payoff equals zero, as the option expires at-the-money. If stock price at option expiration equals $100, the payoff equals $100, as the put option expires in-the-money. If stock price at option expiration equals $160, the put holder receives a positive payoff of $40.

40. Consider a scenario where Annie writes a put option on ABC with an exercise price of $225. If ABC stock price at option expiration equals $125, Annie will *most* likely:

    A. Exercise the option.

    B. Have a negative payoff of $100.

    C. Let the option expire without exercising it.

    Answer: B

    Annie is the put option writer. Since the strike price is greater than the stock price, the holder will exercise the option and Annie would have a negative payoff of $100.

41. Consider a scenario where Arthur writes a call option on ABC with an exercise price of $225. If ABC stock price at option expiration equals $215, Arthur will *most* likely:

    A. Exercise the option.

    B. Have a payoff of zero.

    C. Let the option expire without exercising it.

    Answer: B

Arthur is the call option writer. The stock price at option expiration is lower than the strike price, so the option holder will not exercise the option. Arthur's payoff would therefore equal zero.

42. The minimum value of an American call option with an exercise price of $80 and 6 months till expiration is *closest* to:

    A. $20

    B. $100

    C. $21.55

    Answer: C

    $100 - \{80/[(1 + 0.04)\ \hat{}\ 0.5]\} = \$21.55$

43. The best-case scenario for the writer of a put option *most* likely occurs when:

    A. The stock's price falls to zero.

    B. The stock's price rises above the option's strike price.

    C. The payoff equals the put premium.

    Answer: B

    The highest possible payoff for a put writer occurs when the underlying asset's price rises above the exercise price, resulting in the option expiring without being exercised by the holder.

44. Samantha would like to replicate the payoffs on a put option. A put option is not available in the market. Samantha can replicate the payoffs on her desired put position by:

    A. Purchasing a call and a zero coupon bond, and selling the underlying stock.

    B. Selling a call and the underlying stock, and purchasing a zero coupon bond.

    C. Purchasing a call and the underlying stock, and selling a zero coupon bond.

    Answer: A

    Using put-call parity: $P = C + X/[(1 + Rf)\ \hat{}T] - S$

45. Consider the following statements:

Statement 1: Calls and put prices increase as a result of an increase in interest rate volatility.

Statement 2: There is never a good reason to exercise an American put option prior to expiration.

Which of the following is *most* likely?

A. Both statements are correct.

B. Statement 1 is the only correct statement.

C. Both statements are incorrect.

Answer: B

Statement 1 is correct.

An American put may be exercised prior to expiration if the stock price is currently close to or at zero.

Use the following information to answer Questions 46 to 50:

Capital One Bank enters into a $10,000,000 quarterly-pay plain-vanilla interest rate swap as the fixed-rate payer at a swap rate of 6% based on a 360-day year. The floating-rate payer, First Bank, agrees to make payments at 90-day LIBOR plus a 0.6% margin. 90-day LIBOR currently stands at 4%. LIBOR-90 rates are as follows:

90 days from today = 4.5%

180 days from today = 5.1%

270 days from today = 5.6%

360 days from today = 6.0%

46. Which of the following statements regarding the payments made at the inception of the swap is *most* likely?

A. Capital One Bank will pay First Bank $10 million.

B. First Bank will pay Capital One Bank $10 million.

C. No amount will be exchanged at the inception of the swap.

Answer: C

In a plain-vanilla interest rate swap, no amount is exchanged at the inception of the swap.

47. The floating rate used to determine the settlement payment 90 days from today is *closest* to:

    A. 4.5%

    B. 5.1%

    C. 4.6%

    Answer: C

    The floating interest rate for the first 90 days of the swap will be based on LIBOR at swap inception, plus the margin of 0.6%.

48. After 180 days, First Bank will *most* likely:

    A. Pay $7,500.

    B. Receive $37,500.

    C. Receive $22,500.

    Answer: C

    Net floating-rate payment = $[(0.045 + 0.006) - 0.06] \times (90/360) \times 10{,}000{,}000 = -\$22{,}500$

    First Bank will receive $22,500.

49. After 270 days, Capital One Bank will *most* likely:

    A. Pay $7,500.

    B. Receive $22,500.

    C. Receive $5,000.

    Answer: A

    Net fixed-rate payment = $[0.06 - (0.051 + 0.006)] \times (90/360) \times 10{,}000{,}000 = \$7{,}500$

    Capital One Bank will pay $7,500.

50. After 360 days, First Bank will *most* likely:

    A. Pay $10,000.

B. Pay $15,000.

C. Pay $5,000.

Answer: C

Net floating-rate payment = [(0.056 + 0.006) – 0.06] × (90/360) × 10,000,000 = $5,000

First Bank will pay $5,000.

51. The fixed-rate payer on a plain-vanilla interest rate swap will *most* likely receive a payment on a settlement date if the swap fixed rate:

A. Is greater than the floating rate on the settlement date.

B. Is lower than the floating rate on the settlement date.

C. Was lower than the floating rate on the previous settlement date.

Answer: C

Payments on interest rate swaps are based on the floating rate at the previous settlement date (t – 1). The fixed-rate payer would receive a payment if the swap fixed rate were lower than the floating rate.

52. Consider the following statements:

Statement 1: In computing the spot price of an asset, the present value of the cost of carry is computed using a discount rate that includes a risk premium.

Statement 2: The greater the cost of holding an asset, the higher its spot price.

Which of the following is *most* likely?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Answer: C

We assume that costs and benefits associated with holding the asset are **known** with certainty. Therefore, the risk-free rate is used as the discount rate.

The spot price of an asset is **negatively** related to the cost of holding it.

$$\boxed{S_0\left[\frac{E(S_T)}{(1+r+\lambda)^T}\right]-\theta+\gamma}$$

53. Consider the following statements regarding the valuation of derivative securities:

Statement 1: The expected value of the payoff is computed using risk-neutral probabilities.

Statement 2: The present value of the expected payoff is computed using the risk-free rate.

Which if the following is *most* likely?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Answer: A

When it comes to pricing derivatives, we do not discount the expected payoff of the security at a rate that includes a risk premium commensurate with the uncertainty of the payoff (as we do in pricing underlying assets). The fact that a derivative can be combined with an asset to produce a risk-free position can be used to infer its price. This means that the investor's risk aversion is not a factor in determining the derivative price, so in pricing derivatives we can assume that investors are risk-neutral. Therefore, derivative pricing models discount the expected payoff of the derivative at the risk-free rate rather than the risk-free rate plus a risk premium. Further, the expected payoff is calculated based on what are known as risk-neutral probabilities (not actual or true probabilities of possible outcomes).

54. Consider the following statements regarding the valuation of derivative securities:

Statement 1: The price of a forward contract changes in response to changes in the value of the underlying.

Statement 2: A forward contract gives rise to obligations for both counterparties to the contract.

Which if the following is *most* likely?

A. Both statements are correct.

B. Only one statement is correct.

C. Both statements are incorrect.

Answer: B

The price of a forward contract is **fixed** at contract initiation. The value of the forward changes over its term in response to changes in the value of the underlying.

Both counterparties to a forward contract have an obligation to perform on the terms of the contract.

Use the following information to answer Questions 55 to 58:

Walter White owns an asset worth $150, which he plans to sell in 6 months. To hedge against the possible decline in the price of an asset, he decides to take the short position in a forward contract on the asset. The risk-free rate is given as 5.925%.

55. The no-arbitrage forward price of the contract is *closest* to:

A. $150

B. $154.38

C. $158.89

Answer: B

$F(0,T) = S_0(1 + r)^T$

$F(0,6/12) = \$150 \times (1 + 0.05925)^{(6/12)} = \mathbf{\$154.38}$

56. Given that 3 months into the term of the contract the spot price of the underlying is $145.45, the value of the short position is *closest* to:

A. -$6.72

B. -$11.17

C. $6.72

Answer: C

$V_t(0,T) = S_t - F(0,T) / (1 + r)^{T-t}$

$V_{3/12}(0,6/12) = 145.45 - 154.38/(1.05925)^{(6/12-3/12)} = -\$6.72$

The value of the short position is **positive $6.72**.

57. Given that 5 months into the term of the contract the spot price of the underlying is $158.55, the value of the short position is *closest* to:

A. −$4.91

B. $7.83

C. −$7.83

Answer: A

$V_{5/12}(0,6/12) = 158.55 - 154.38/(1.05925)^{(6/12-5/12)} = \$4.91$

The investor is short; thus, the value to the investor is **negative $4.91**.

58. Given that at contract maturity the spot price of the underlying asset is actually $140, the value of the short position at expiration is *closest* to:

A. −$14.38

B. $18.89

C. $14.38

Answer: C

$V_T(0,T) = S_T - F(0,T)$

$V_{6/12}(0,6/12) = 140 - 154.38 = -14.38$

The value of the short position is **positive $14.38**.

Use the following information to answer Questions 59 and 60:

Bill Prady wishes to purchase a security in 9 months that is currently worth $95. To hedge against a possible increase in price, he decides to take the long position on a forward contract on the security that expires in 9 months. The risk-free rate is given as 4%.

59. The no-arbitrage forward price of the contract is *closest* to:

A. \$98.80

B. \$97.84

C. \$95.94

Answer: B

$F(0,9/12) = 95 \times (1.04)^{(9/12)} = \mathbf{\$97.84}$

60. Given that 5 months into the term of the contract the spot price of the underlying is \$96, the value of the long position is *closest* to:

A. −\$0.57

B. −\$0.28

C. \$0.28

Answer: A

$V_{5/12}(0, 9/12) = 96 - 97.84/(1.04)^{(9/12\text{-}5/12)} = \mathbf{-\$0.57}$

61. Consider the following statements:

Statement 1: The greater the benefits of holding the underlying asset, the lower the price of the forward contract relative to the spot price.

Statement 2: The long position benefits if the market interest rate at FRA expiration is greater than the FRA rate.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are correct.

Answer: C

Acquiring the asset in the forward market should be cheaper than acquiring it in the spot market, as the forward position forgoes the benefits associated with holding the underlying asset.

If LIBOR at FRA expiration is *greater* than the FRA rate, the long benefits. Effectively, the long has access to a loan at lower-than-market rates, while the short is obligated to give out a loan at lower-than-market interest rates.

62. Consider the following statements:

Statement 1: All other things remaining the same, if the price of the underlying asset is negatively correlated with interest rates, traders who would like to go long on the underlying would most likely prefer futures to forwards.

Statement 2: All other things remaining the same, if futures prices are uncorrelated with interest rates, forward and futures would have the same prices.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

If the price of the underlying asset is negatively correlated with interest rates, any gains from mark-to-market adjustments must be reinvested at lower interest rates, while any losses from mark-to-market adjustments must be financed at higher interest rates. Therefore, traders wishing to go long on the underlying would most likely **prefer forwards to futures**.

Statement B is indeed correct.

63. Consider the following statements:

Statement 1: If interest rates rise after swap initiation, the swap will be an asset to the floating-rate payer and a liability for the fixed-rate payer.

Statement 2: An option is in-the-money when its exercise value is greater than zero.

Which of the following is *most* likely?

A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: B

If interest rates increase after swap initiation, the present value of floating-rate payments (based on the new term structure) will exceed the present value of fixed-rate payments (based on the swap fixed rate). The swap will have a positive value for the fixed-rate payer (floating-rate receiver).

Statement 2 is indeed correct. An option is in-the-money when immediate exercise would result in a positive payoff.

Use the following information to answer Questions 64 to 67:

A stock that is currently trading at $80 can go up 26% or down 20% over the coming year. A call option on the stock that expires in one year and has an exercise price of $87 is currently selling for $9. The risk-free rate is 8%.

64. If the stock price goes up 26% over the period, the intrinsic value of the call option is *closest* to:

    A. $0

    B. $9

    C. $13.8

    Answer: C

    $S^+ = Su = 80 \times (1 + 0.26) = 100.80$

    $c^+ = \text{Max}(0, S^+ - X) = \text{Max}(0, 100.80 - 87) = \mathbf{\$13.80}$

65. If the stock price goes down 20% over the period, the intrinsic value of the call option is *closest to*:

    A. $0

    B. $9

    C. $13.80

    Answer: A

    $S^- = Sd = 80 \times (1 - 0.20) = 64$

    $c^- = \text{Max}(0, S^- - X) = \text{Max}(0, 64 - 75) = \mathbf{\$0}$

66. The risk-neutral probabilities of up and down moves in the binomial

model are *closest* to:

	π	**1 − π**
A.	0.4348	0.5652
B.	0.6087	0.3913
C.	0.8302	0.1698

Answer: B

$$\pi = \frac{1 + r - d}{u - d}$$

$$\pi = \frac{1 + 0.08 - 0.8}{1.26 - 0.8} = 0.6087$$

$1 - \pi = 1 - 0.6087 = 0.3913$

67. The value of the call option today is *closest* to:

A. 7.78

B. 9.0

C. 10.61

Answer: A

$$c = \frac{\pi c^{+} + (1 - \pi)c^{-}}{(1 + r)}$$

$$c = \frac{0.06087(13.8) + 0.3913(0)}{1.08} = \$7.78$$

68. Consider the following statements:

Statement 1: All other things remaining the same, a European call option on a stock can never be worth more than an American call option on the stock.

Statement 2: All other things remaining the same, a European put option on a stock can never be worth more than an American put option on the stock.

Which of the following is *most* likely?

A. Only Statement 1 is incorrect.

B. Only Statement 2 is incorrect.

C. Both statements are correct.

Answer: C

All other things remaining the same, American options on stocks must be worth at least as much as European options, if not worth more.

69. An increase in the price of both call and put options on stocks will *least* likely be caused by:

A. An increase in volatility.

B. An increase in the risk–free rate.

C. An increase in time to expiration.

Answer: B

An increase in volatility increases the price of put and call options.

An increase in time to expiration typically increases the price of put and call options (time value).

An increase in the risk–free rate results in an increase in the price of call options, but a decrease in the price of put options.

70. A protective put with a forward contract is *least* likely to include:

A. A long position on a forward contract on the underlying stock.

B. A risk–free bond that has a face value equal to the forward price.

C. A European call option on the underlying stock.

Answer: C

A protective put with a forward contract includes a put option, a long position on a forward contract on the underlying stock, and a zero –coupon bond.

71. Which of the following is *least* likely when replicating the pay–fixed side of a swap through a series of forward contracts?

A. The investor must take a long position on each of the forward contracts.

B. One forward contract should expire at each reset date.

C. Since each forward contract expires at a different point in time, the contracts can have different prices.

Answer: C

Since we require each of the FRAs to have an FRA rate equal to the swap fixed rate to replicate the payoffs of the interest rate swap, we would actually have to use off–market FRAs to replicate a swap.

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Use the following information to answer Questions 1 to 12:

On Day 0, Rahul purchases a European call option on XYZ stock from Betty for $5. The option has 6 months till expiration and an exercise price of $48. On the same day, Julio purchases a European put option on XYZ from Susan for $10. This option has an exercise price of $60 and has 9 months remaining till expiration.

1. Rahul's breakeven occurs at a price of:
   - A. $53
   - B. $43
   - C. $48
2. Julio's breakeven occurs at a price of:
   - A. $70
   - B. $50
   - C. $38
3. Betty's breakeven occurs at a price of:
   - A. $53
   - B. $43
   - C. $48
4. Susan's breakeven occurs at a price of:
   - A. $70
   - B. $50
   - C. $38
5. The highest possible payoff for Rahul is *most likely*:
   - A. Unlimited

B. $5

C. $48

6. The highest possible profit for Betty is *most likely*:

A. $5

B. $48

C. $0

7. The highest possible loss for Rahul is *most likely*:

A. Unlimited

B. Zero

C. $5

8. The highest possible payoff for Julio is *most likely*:

A. $10

B. $60

C. Unlimited

9. The worst possible loss for Susan is *most likely*:

A. Unlimited

B. $60

C. $50

10. The highest possible profit for Susan is *closest to*:

A. Unlimited

B. Zero

C. $10

11. The worst possible loss for Julio is *closest to*:

A. $10

B. Unlimited

C. $50

12. Which of the following is *most likely* the price of XYZ stock today

assuming that both options were in-the-money when purchased?

A. $51

B. $52

C. $54

Use the following information to answer Questions 13 to 15:

Janet already owns a share of ABC stock, which is currently trading for $95. She decides to write a European call option on the stock with 6 months to expiration and an exercise price of $100 for $7.50.

13. Janet's highest possible profit on the covered call strategy is *closest to:*

    A. Infinity

    B. $7.50

    C. $12.50

14. Janet's maximum possible loss on her covered call position is *closest to*:

    A. Unlimited

    B. $87.50

    C. $7.50

15. Janet's breakeven on the covered call position occurs at a price of:

    A. $87.50

    B. $112.50

    C. $107.50

16. Which of the following statements regarding a covered call strategy is *least likely*:

    A. The investor purchases calls that are out-of-the-money.

    B. The investor essentially trades the upside in the stock in return for the call premium.

    C. The payoff curve of the strategy resembles that of a written put in shape.

Use the following information to answer Questions 17 to 20:

Katie already owns a share of PQ stock, which is currently trading for $54. She decides to purchase a European put option on the stock with 6 months to expiration and an exercise price of $25 for $2.

17. Katie's maximum possible profit on the strategy is *closest to*:

    A. Infinity

    B. $3

    C. Zero

18. Katie's maximum loss on the protective put is *closest to*:

    A. $29

    B. $31

    C. Unlimited

19. Katie breaks even on the strategy at a stock price of:

    A. $56

    B. $52

    C. $26

20. At a stock price of $43, Katie makes a:

    A. Profit of $9.

    B. Loss of $13.

    C. Loss of $11.

21. The shape of the payoff diagram of a protective put strategy most closely resembles the shape of the payoff diagram of:

    A. A long call.

    B. A short call.

    C. A long put.

22. The shape of the payoff diagram of a covered call strategy most closely resembles the shape of the payoff diagram of:

    A. A long call.

    B. A short put.

C. A long put.

23. Which of the following is the riskiest options strategy?

    A. Long call

    B. Short call

    C. Long put

24. An investor purchases a call option on a stock for $5. The exercise price of the option is $40. The breakeven price for the writer of the call option is *closest to*:

    A. $45

    B. $35

    C. $40

25. An investor who pursues a covered call strategy is *most likely*:

    A. Trading the downside in the stock in return for the call premium.

    B. Trading the upside in the stock in return for the call premium.

    C. Is confident that the stock will rise in the future.

26. An investor who pursues a protective put strategy:

    A. Is seeking protection on the downside.

    B. Is confident that the stock will remain close to its current value in the short term.

    C. Will profit when there is a decrease in the value of the underlying.

Reading 59: Risk Management Applications of Option Strategies

Use the following information to answer Questions 1 to 12:

On Day 0, Rahul purchases a European call option on XYZ stock from Betty for \$5. The option has 6 months till expiration and an exercise price of \$48. On the same day, Julio purchases a European put option on XYZ from Susan for \$10. This option has an exercise price of \$60 and has 9 months remaining till expiration.

1. Rahul's breakeven occurs at a price of:

   A. \$53

   B. \$43

   C. \$48

   Answer: A

   Breakeven for call option holder = X + C = \$48 + \$5 = \$53

2. Julio's breakeven occurs at a price of:

   A. \$70

   B. \$50

   C. \$38

   Answer: B

   Breakeven for put option holder = X – P = \$60 – \$10 = \$50

3. Betty's breakeven occurs at a price of:

   A. \$53

   B. \$43

   C. \$48

   Answer: A

   Breakeven for call option writer occurs at the same point as the breakeven for call option holder.

X + C = $48 + $5 = $53

4. Susan's breakeven occurs at a price of:

   A. $70

   B. $50

   C. $38

   Answer: B

   Breakeven for put option writer occurs at the same point as the breakeven for put option holder.

   X – P = $60 – $10 = $50

5. The highest possible payoff for Rahul is *most likely*:

   A. Unlimited

   B. $5

   C. $48

   Answer: A

   The call option holder's positive payoffs are unlimited.

6. The highest possible profit for Betty is *most likely*:

   A. $5

   B. $48

   C. $0

   Answer: A

   The highest possible payoff for the call option writer occurs when the option is not exercised. In this case, the writer makes a profit equal to the call option premium.

7. The highest possible loss for Rahul is *most likely*:

   A. Unlimited

   B. Zero

   C. $5

Answer: C

The highest possible loss to the call option holder occurs when the option finishes out of the money. In this case, the holder's loss equals the call option premium.

8. The highest possible payoff for Julio is *most likely*:

   A. $10

   B. $60

   C. Unlimited

   Answer: B

   Julio's highest possible payoff equals the exercise price. He would earn this payoff if XYZ stock price were to equal $0 at option expiration.

9. The worst possible loss for Susan is *most likely*:

   A. Unlimited

   B. $60

   C. $50

   Answer: C

   If the stock price at option expiration falls to zero, Susan suffers a loss of $50. Negative payoff of $60 is adjusted for option premium ($10).

10. The highest possible profit for Susan is *closest to*:

    A. Unlimited

    B. Zero

    C. $10

    Answer: C

    Susan earns a profit equal to the option premium ($10) if the option finishes out-of or at-the-money.

11. The worst possible loss for Julio is *closest to*:

    A. $10

    B. Unlimited

C. $50

Answer: A

The option holder's losses are limited to the option premium ($10).

12. Which of the following is *most likely* the price of XYZ stock today assuming that both options were in-the-money when purchased:

A. $51

B. $52

C. $54

Answer: B

If both the options were in-the-money when purchased, XYZ stock price today would lie somewhere between the exercise prices of the call and the put (above the exercise price of the call and below the exercise price of the put).

Within this range, the price of the stock should be closer to the exercise price of the call, which has lower time value than the put since it expires earlier.

If the price of XYZ were $51:

The intrinsic value of the call would be $3 and its time value would be $2. 3 + 2 = 5 (call premium)

The intrinsic value of the put would be $9 and its time value would be $1. 9 + 1 = 10 (put premium)

The put cannot have a time value that is less than the time value of the call. This is why the current price cannot be $51.

If the price of XYZ were $52:

The intrinsic value of the call would be $4 and its time value would be $1. 4 + 1 = 5 (call premium)

The intrinsic value of the put would be $8 and its time value would be $2. 8 + 2 = 10 (put premium)

The time value of the call is less than the time value of the put, which makes sense given the put's longer term to expiration.

Use the following information to answer Questions 13 to 15:

Janet already owns a share of ABC stock, which is currently trading for $95. She decides to write a European call option on the stock with 6 months to expiration and an exercise price of $100 for $7.50.

13. Janet's highest possible profit on the covered call strategy is *closest to:*

    A. Infinity

    B. $7.50

    C. $12.50

    Answer: C

    Janet makes a maximum profit of $12.50 if the option finishes at-the-money and the stock price at option expiration equals the exercise price ($100). In this case she gets a capital gain of $5 ($100 – $95) on her holding of the stock plus the option premium of $7.50.

14. Janet's maximum possible loss on her covered call position is *closest to*:

    A. Unlimited

    B. $87.50

    C. $7.50

    Answer: B

    Janet makes a loss of $87.50 if XYZ stock falls to $0 at option expiration. She suffers a capital loss of $95 on her stock position, which is mitigated by option premium income of $7.50.

15. Janet's breakeven on the covered call position occurs at a price of:

    A. $87.50

    B. $112.50

    C. $107.50

    Answer: A

    Janet breaks even when the income from collection of the option premium ($7.50) is exactly offset by decrease in the value of her stock holding. This occurs at a stock price of $87.50.

16. Which of the following statements regarding a covered call strategy is *least likely*:

    A. The investor purchases calls that are out-of-the-money.

    B. The investor essentially trades the upsidein the stock in return for the call premium.

    C. The payoff curve of the strategy resembles that of a written put in shape.

    Answer: A

    In a covered call strategy, the calls that are **written** are typically out-of-the-money. The other two statements are correct.

Use the following information to answer Questions 17 to 20:

Katie already owns a share of PQ stock, which is currently trading for $54. She decides to purchase a European put option on the stock with 6 months to expiration and an exercise price of $25 for $2.

17. Katie's maximum possible profit on the strategy is *closest to*:

    A. Infinity

    B. $3

    C. Zero

    Answer: A

    Since she is still long on the stock, her profits are unlimited.

18. Katie's maximum loss on the protective put is *closest to*:

    A. $29

    B. $31

    C. Unlimited

    Answer: B

    The maximum loss occurs when the stock falls in value to or below the exercise price of the option. The capital loss at a stock price of $25 equals $29 and the cost of the put was $2. Therefore, the total loss in this scenario would be $31.

19. Katie breaks even on the strategy at a stock price of:

A. $56

B. $52

C. $26

Answer: A

Her breakeven occurs when the increase in the price of the stock offsets the cost of the option ($2).

20. At a stock price of $43, Katie makes a:

A. Profit of $9.

B. Loss of $13.

C. Loss of $11.

Answer: B

At a price of $43, Katie suffers a capital loss of $11 and a loss on the option position of $2. Her total loss is therefore $13.

21. The shape of the payoff diagram of a protective put strategy most closely resembles the shape of the payoff diagram of:

A. A long call.

B. A short call.

C. A long put.

Answer: A

The payoff curve for a protective put is horizontal initially and then slopes upward.

22. The shape of the payoff diagram of a covered call strategy *most closely* resembles the shape of the payoff diagram of:

A. A long call.

B. A short put.

C. A long put.

Answer: B

The payoff curve for a covered call is upward sloping initially and then becomes flat.

23. Which of the following is the riskiest options strategy?

    A. Long call

    B. Short call

    C. Long put

    Answer: B

    A call option writer's losses are unlimited. The long call and long put have a maximum loss equal to the option premium

24. An investor purchases a call option on a stock for $5. The exercise price of the option is $40. The breakeven price for the writer of the call option is *closest to*:

    A. $45

    B. $35

    C. $40

    Answer: A

    The breakeven price for a call option holder and writer is the same. X + C = $45

25. An investor who pursues a covered call strategy is *most likely*:

    A. Trading the downside in the stock in return for the call premium.

    B. Trading the upside in the stock in return for the call premium.

    C. Is confident that the stock will rise in the future.

    Answer: B

    An investor who pursues a covered call strategy essentially trades away the upside in the stock in return for the premium collected upon writing the call.

26. An investor who pursues a protective put strategy:

    A. Is seeking protection on the downside.

    B. Is confident that the stock will remain close to its current value in the short term.

C. Will profit when there is a decrease in the value of the underlying.

Answer: A

An investor who pursues a protective put strategy is seeking insurance against a fall in the stock price.

Alternative Investments

Reading 60: Introduction to Alternative Investments

Use the following information to answer Questions 1 to 3:

Tuscin Capital is a hedge fund with an initial investment capital of $100 million. In its first year, the fund earns a return of 30%. The fund charges a 2% management fee based on assets under management at the end of the year and a 20% incentive fee with a hurdle rate of 4%. The ending values of the fund (before fees for the current year) for the first 3 years are given below:

- 2009 = $130 million
- 2010 = $110 million
- 2011 = $140 million

Other information:

- A high-water mark provision applies; and
- The incentive fee is based on returns in excess of the hurdle rate and is calculated net of management fee.

1. The incentive fee for 2009 is *closest to*:

   A. $4.68 million.

   B. $5.48 million.

   C. $6.00 million.

2. Total fees for the year 2010 are *closest to*:

   A. $2.96 million.

   B. $2.45 million.

   C. $2.2 million.

3. Investors' effective return for 2011 is *closest to*:

   A. 10.35%

   B. 22.86%

C. 25.63%

4. Investments in alternative investments that are made through special investment vehicles are *least likely* characterized by:

   A. High fees.

   B. Low investment size.

   C. High use of leverage.

5. Activist strategies are *most likely* classified under which of the following hedge fund strategies?

   A. Event-driven strategies

   B. Relative value strategies

   C. Equity hedge strategies

6. Which of the following equity hedge strategies is *most likely* to have zero beta exposure to overall market risk?

   A. Market neutral

   B. Quantitative directional

   C. Short bias

7. Consider the following statements:

   Statement 1: The correlation between hedge fund returns and stock market returns increases in times of financial crisis.

   Statement 2: In addition to management and incentive fees, hedge funds may also charge a fee for arranging divestures of assets.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

   B. Only Statement 2 is correct.

   C. Both statements are incorrect.

8. Which of the following can *most likely* magnify losses for hedge funds?

   A. Margin calls

   B. Investor redemptions

C. Margin calls and investor redemptions

9. Which of the following provisions in private equity partnership agreements ensures that the overall profit sharing ratio conforms to the initially agreed-upon profit split even if returns on portfolio companies are much higher in earlier years?

   A. Clawback provision

   B. Hurdle rate

   C. High water mark

10. Which of the following is *least likely* a characteristic exhibited by LBO targets?

    A. They have a significant proportion of valuable intangible assets.

    B. They have relatively low leverage.

    C. They have strong and sustainable cash flows.

11. Which of the following stages of venture capital investments is *most likely* the first stage at which VC firms invest?

    A. Angel investing

    B. Seed-stage financing

    C. Early stage financing

12. Formative stage financing is *least likely* provided in the form of:

    A. Debt.

    B. Ordinary shares.

    C. Convertible preferred shares.

13. Which of the following types of financing is *most likely* provided to prepare a company to go public?

    A. Early-stage financing

    B. Mezzanine-stage financing

    C. Later-stage financing

14. When a PE firm sells a portfolio company to another PE firm, it is *most likely* referred to as a(n):

A. Trade sale.

B. Associate sale.

C. Secondary sale.

15. Which of the following valuation approaches is *least likely* used to value real estate properties?

    A. Comparable sales approach

    B. Direct capitalization approach

    C. Asset-based approach

16. Consider the following statements:

    Statement 1: Fluctuations in commodity spot prices are driven primarily by fluctuations in supply rather than in demand.

    Statement 2: Commodity returns have exhibited a higher standard deviation than stocks and bonds over the last 20 years.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are incorrect.

17. Which of the following is *most likely*?

    A. Futures price = Spot price + Interest costs – Storage costs – Convenience yield.

    B. Futures price = Spot price + Cost of carry – Convenience yield.

    C. Futures price = Spot price + Interest costs – Storage costs + Convenience yield.

18. Which of the following is not a relative value hedge fund strategy?

    A. Convertible arbitrage fund

    B. Merger arbitrage fund

    C. Multistrategy

19. Generally speaking, what is the aggregate fee structure of a hedge fund of funds?

A. 1% plus 10% of profits

B. 2% plus 20% of profits

C. 3% plus 30% of profits

20. For highly illiquid or nontraded alternative investments, what is the most likely method used for valuing them alongside other fund assets?

    A. Fund's best estimate

    B. Book value at time of investment

    C. Statistical modeling

21. Scott is running a multi-billion-dollar pension fund with a 40% allocation to alternative investments and a 60% allocation to equities that have just fallen 50% in value, whereas the alternative investments have gone up 20%. He wants to rebalance the portfolio to take advantage of the huge discount in equities. What type of risk is Scott going to experience in trying to do this?

    A. Rebalancing risk

    B. Illiquidity risk

    C. Liquidation risk

22. Which of the following metrics uses downside deviation as opposed to standard deviation as a measure of risk?

    A. Value-at-risk

    B. Shortfall or safety first measures

    C. Sortino ratio

23. Which of the following items would not be included as part of a risk management due diligence review for a hedge fund?

    A. Fund risk policies

    B. Fund leverage

    C. Fund structure

Reading 60: Introduction to Alternative Investments

Use the following information to answer Questions 1 to 3:

Tuscin Capital is a hedge fund with an initial investment capital of $100 million. In its first year, the fund earns a return of 30%. The fund charges a 2% management fee based on assets under management at the end of the year and a 20% incentive fee with a hurdle rate of 4%. The ending values of the fund (before fees for the current year) for the first 3 years are given below:

- 2009 = $130 million
- 2010 = $110 million
- 2011 = $140 million

Other information:

- A high-water mark provision applies; and
- The incentive fee is based on returns in excess of the hurdle rate and is calculated net of management fee.

1. The incentive fee for 2009 is *closest to*:

   A. $4.68 million.

   B. $5.48 million.

   C. $6.00 million.

   Answer: A

   Management fee = 130 million × 0.02 = $2.6 million

   Incentive fee = [130 – 100 – (100 × 0.04) – 2.6] × 0.20 = $4.68 million

2. Total fees for the year 2010 are *closest to*:

   A. $2.96 million.

   B. $2.45 million.

C. $2.2 million.

Answer: C

Total fee in 2009 = Management fee + Incentive fee = 2.6 million + 4.68 million = $7.28 million

Therefore, beginning capital position in 2010 = 130 million – 7.28 million = $122.72 million

Ending value of the fund in 2010 = $110 million

Since the fund has declined in value, no incentive fee will be paid.

Management fee = 110 million × 0.02 = $2.2 million

3. Investors' effective return for 2011 is *closest to*:

   A. 10.35%

   B. 22.86%

   C. 25.63%

   Answer: C

   Total fee paid in 2010 = $2.2 million

   Therefore, beginning capital position in 2011 = 110 million – 2.2 million = $107.8 million

   Ending value of the fund in 2010 = $140 million

   Management fee = 140 million × 0.02 = $2.8 million

   Incentive fee = [140 million – 122.72 million – 2.8 million – (0.04 × 140 million)] × 0.20 = $1.776 million (High water mark applies)

   Total fee = 2.8 million + 1.776 million = $4.576 million

   Investor's effective return = (140 – 4.576 – 107.8) / 107.8 = 25.63%

4. Investments in alternative investments that are made through special investment vehicles are *least likely* characterized by:

   A. High fees.

   B. Low investment size.

   C. High use of leverage.

Answer: B

Investments in alternative investments that are made through special investment vehicles require relatively large investment amounts.

5. Activist strategies are *most likely* classified under which of the following hedge fund strategies?

   A. Event-driven strategies

   B. Relative value strategies

   C. Equity hedge strategies

   Answer: A

   Activist strategies (that focus on purchasing sufficient equity in a company to be able to influence its policies and strategic direction) are categorized as **event-driven strategies**.

6. Which of the following equity hedge strategies is *most likely* to have zero beta exposure to overall market risk?

   A. Market neutral

   B. Quantitative directional

   C. Short bias

   Answer: A

   Quantitative directional strategies may have positive or negative beta exposure depending on their expectations regarding future market direction.

   Short bias strategies have negative beta exposure to the overall market.

7. Consider the following statements:

   Statement 1: The correlation between hedge fund returns and stock market returns increases in times of financial crisis.

   Statement 2: In addition to management and incentive fees, hedge funds may also charge a fee for arranging divestures of assets.

   Which of the following is *most likely*?

   A. Only Statement 1 is correct.

B. Only Statement 2 is correct.

C. Both statements are incorrect.

Answer: A

In addition to management and incentive fees, **LBO firms** may also charge fees for (1) arranging divestures of assets and (2) arranging buyouts of companies.

8. Which of the following can *most likely* magnify losses for hedge funds?

A. Margin calls

B. Investor redemptions

C. Margin calls and investor redemptions

Answer: C

Margin calls can magnify losses if the hedge fund is forced to liquidate certain positions immediately.

Redemptions usually occur when the fund is performing poorly. They can also force the fund to close certain positions quickly.

9. Which of the following provisions in private equity partnership agreements ensures that the overall profit sharing ratio conforms to the initially agreed-upon profit split even if returns on portfolio companies are much higher in earlier years?

A. Clawback provision

B. Hurdle rate

C. High water mark

Answer: A

A clawback provision prevents the GP from earning more than its share of profits if incentive fees are paid on profits earned over time and the fund's profits are relatively high in early years but decline later.

10. Which of the following is *least likely* a characteristic exhibited by LBO targets?

A. They have a significant proportion of valuable intangible assets.

B. They have relatively low leverage.

C. They have strong and sustainable cash flows.

Answer: A

LBO targets typically have a relatively high proportion of **tangible physical** assets, which can be used by the LBO firm to collateralize the loans taken to finance the buyout.

11. Which of the following stages of venture capital investments is *most likely* the first stage at which VC firms invest?

A. Angel investing

B. Seed-stage financing

C. Early stage financing

Answer: B

Seed-stage financing is typically the first stage at which VC firms invest in companies. At the angel stage, capital is primarily provided by individuals (friends and family).

12. Formative stage financing is *least likely* provided in the form of:

A. Debt.

B. Ordinary shares.

C. Convertible preferred shares.

Answer: A

Debt financing is typically provided in later stage financing when the company has commenced commercial operations and has the cash flows required to service debt.

13. Which of the following types of financing is *most likely* provided to prepare a company to go public?

A. Early-stage financing

B. Mezzanine-stage financing

C. Later-stage financing

Answer: B

Mezzanine-stage financing is provided to prepare a company to go public. Later-stage financing (expansion venture capital) is provided after the company has begun commercial operations but before any IPO.

14. When a PE firm sells a portfolio company to another PE firm, it is *most likely* referred to as a(n):

    A. Trade sale.

    B. Associate sale.

    C. Secondary sale.

    Answer: C

    A trade sale occurs when a company is sold to a strategic buyer. A secondary sale occurs when a company is sold to another PE firm or group of investors.

15. Which of the following valuation approaches is *least likely* used to value real estate properties?

    A. Comparable sales approach

    B. Direct capitalization approach

    C. Asset-based approach

    Answer: C

    Asset-based approaches are used to compute REIT NAVs. They are not used to value individual properties.

16. Consider the following statements:

    Statement 1: Fluctuations in commodity spot prices are driven primarily by fluctuations in supply rather than in demand.

    Statement 2: Commodity returns have exhibited a higher standard deviation than stocks and bonds over the last 20 years.

    Which of the following is *most likely*?

    A. Only Statement 1 is correct.

    B. Only Statement 2 is correct.

    C. Both statements are incorrect.

Answer: B

Fluctuations in commodity spot prices are driven more by fluctuations in **demand** than in supply as supply is relatively inelastic over the short run.

17. Which of the following is *most likely*?

    A. Futures price = Spot price + Interest costs – Storage costs – Convenience yield.

    B. Futures price = Spot price + Cost of carry – Convenience yield.

    C. Futures price = Spot price + Interest costs – Storage costs + Convenience yield.

    Answer: B

    Futures price = Spot price (1 + r) + Storage costs – Convenience yield.

    Interest costs and storage costs together are known as the cost of carry.

18. Which of the following is not a relative value hedge fund strategy?

    A. Convertible arbitrage fund

    B. Merger arbitrage fund

    C. Multistrategy

    Answer: B

    The merger arbitrage funds fall under the category of event-driven, not relative value, strategies.

19. Generally speaking, what is the aggregate fee structure of a hedge fund of funds?

    A. 1% plus 10% of profits

    B. 2% plus 20% of profits

    C. 3% plus 30% of profits

    Answer: C

    Direct hedge funds normally charge a fee of 2% plus 20% of profits, and the hedge fund of funds adds on a 1% management fee plus 10% of profits.

20. For highly illiquid or nontraded alternative investments, what is the most likely method used for valuing them alongside other fund assets?

A. Fund's best estimate

B. Book value at time of investment

C. Statistical modeling

Answer: C

For highly illiquid or nontraded investments where reliable market value data is unavailable, values are estimated using statistical models.

21. Scott is running a multi-billion-dollar pension fund with a 40% allocation to alternative investments and a 60% allocation to equities that have just fallen 50% in value, whereas the alternative investments have gone up 20%. He wants to rebalance the portfolio to take advantage of the huge discount in equities. What type of risk is Scott going to experience in trying to do this?

A. Rebalancing risk

B. Illiquidity risk

C. Liquidation risk

Answer: B

Illiquidity risk will be Scott's primary enemy in trying to rebalance his portfolio. This is because virtually all alternative investments are illiquid to various degrees. For example, most hedge funds only offer quarterly liquidity and private equity funds cannot be liquidated, except on secondary markets for a discount to intrinsic value.

22. Which of the following metrics uses downside deviation as opposed to standard deviation as a measure of risk?

A. Value-at-risk

B. Shortfall or safety first measures

C. Sortino ratio

Answer: C

The Sortino ratio measure of downside risk uses downside deviation as opposed to standard deviation for a measure of risk.

23. Which of the following items would not be included as part of a risk management due diligence review for a hedge fund?

A. Fund risk policies

B. Fund leverage

C. Fund structure

Answer: C

Fund structure is part of the legal review process when conducting due diligence on a hedge fund.