

### Question #1 of 117

Twenty Level I CFA candidates in a study group took a practice exam and want to determine the distribution of their scores. When they grade their exams they discover that one of them skipped an ethics question and subsequently filled in the rest of his answers in the wrong places, leaving him with a much lower score than the rest of the group. If they include this candidate's score, their distribution will *most likely*:

- A) be positively skewed.
  - B) have a mean that is less than its median.
  - C) have a mode that is less than its median.
- 

### Question #2 of 117

Annual Returns on ABC Mutual Fund									
Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
11.0%	12.5%	8.0%	9.0%	13.0%	7.0%	15.0%	2.0%	-16.5%	11.0%

Assuming a mean of 7.2%, what is the sample standard deviation of the returns for ABC Mutual Fund for the period from Year 1 to Year 10?

- A) 9.8%.
  - B) 7.8%.
  - C) 9.1%.
- 

### Question #3 of 117

Consider the following statements about the geometric and arithmetic means as measures of central tendency. Which statement is *least* accurate?

- A) The geometric mean calculates the rate of return that would have to be earned each year to match the actual, cumulative investment performance.
  - B) The difference between the geometric mean and the arithmetic mean increases with an increase in variability between period-to-period observations.
  - C) The geometric mean may be used to estimate the average return over a one-period time horizon because it is the average of one-period returns.
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### Question #4 of 117

In a skewed distribution, what is the minimum proportion of observations between +/- two standard deviations from the mean?

A) 95%.

B) 84%.

C) 75%.

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### Question #5 of 117

A distribution with a mode of 10 and a range of 2 to 25 would *most likely* be:

A) negatively skewed.

B) normally distributed.

C) positively skewed.

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### Question #6 of 117

Use the results from the following survey of 500 firms to answer the question.

Number of Employees	Frequency
300 up to 400	40
400 up to 500	62
500 up to 600	78
600 up to 700	101
700 up to 800	131
800 up to 900	88

The lower boundary of the fifth interval (class) is:

A) 700

B) 701

C) 800

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### Question #7 of 117

A summary measure of a characteristic of an entire population is called a:

A) statistic.

B) parameter.

C) census.

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### Question #8 of 117

A sample of returns for four randomly selected assets in a portfolio is shown below:

Asset	Return (%)
A	1.3
B	1.4
C	2.2
D	3.4

What is the sample standard deviation of asset returns?

- A) 0.88%.
  - B) 0.97%.
  - C) 1.13%.
- 

### Question #9 of 117

Given the following annual returns, what are the population variance and standard deviation, respectively?

2000	2001	2002	2003	2004
15%	2%	5%	-7%	0%

- A) 32.4; 5.7.
  - B) 51.6; 7.2.
  - C) 64.5; 8.0.
- 

### Question #10 of 117

A portfolio has a return of 14.2% and a Sharpe's measure of 3.52. If the risk-free rate is 4.7%, what is the standard deviation of returns?

- A) 2.6%.
  - B) 3.9%.
  - C) 2.7%.
- 

### Question #11 of 117

Portfolio A earned an annual return of 15% with a standard deviation of 28%. If the mean return on Treasury bills (T-bills) is 4%, the Sharpe ratio for the portfolio is:

- A) 1.87.

B) 0.39.

C) 0.54.

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### Question #12 of 117

Given the following annual returns, what are the median and mode returns, respectively?

1995	1996	1997	1998	1999
15%	2%	5%	-7%	0%

A) 2.00%; 3.00%.

B) no median exists; no mode exists.

C) 2.00%; no mode exists.

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### Question #13 of 117

Cameron Ryan wants to make an offer on the condominium he is renting. He takes a sample of prices of condominiums in his development that closed in the last five months. Sample prices are as follows (amounts are in thousands of dollars): \$125, \$175, \$150, \$155 and \$135. The sample standard deviation is *closest* to:

A) 38.47.

B) 370.00.

C) 19.24.

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### Question #14 of 117

Which of the following statements regarding the Sharpe ratio is *most* accurate? The Sharpe ratio measures:

A) peakedness of a return distribution.

B) excess return per unit of risk.

C) total return per unit of risk.

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### Question #15 of 117

Claude Bellow, CFA, is an analyst with a real estate focused investment firm. He asks his assistant to gather annual return information on a large office building and on a (REIT) real estate investment trust with diverse holdings. The following tables summarize the information.

Table 1: Annual returns (in %)					
Asset	Year 1	Year 2	Year 3	Year 4	Year 5
REIT	25.0	20.0	5.0	-5.0	13.0
Office Building	15.0	5.0	-5.0	-2.0	13.0

Table 2: Mean and Dispersion Information		
Asset	Mean Return*	Variance
REIT	11.6%	114.24
Office Building	5.2%	62.56

\* Calculated using the arithmetic mean.

A partner in the firm asks Bellow to calculate the Sharpe ratio for the REIT. If the risk-free rate is 5.0%, the Sharpe ratio is *closest* to:

- A) 0.06.
- B) 1.62.
- C) 0.62.

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### Question #16 of 117

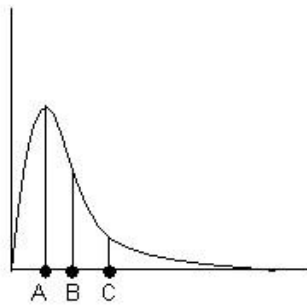
An investor has a \$12,000 portfolio consisting of \$7,000 in stock A with an expected return of 20% and \$5,000 in stock B with an expected return of 10%. What is the investor's expected return on the portfolio?

- A) 15.0%.
- B) 15.8%.
- C) 12.2%.

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### Question #17 of 117

Consider the following graph of a distribution for the prices for various bottles of California-produced wine.



Which of the following statements about this distribution is *least* accurate?

- A) Approximately 68% of observations fall within one standard deviation of the mean.
- B) The graph could be of the sample \$16, \$12, \$15, \$12, \$17, \$30 (*ignore graph scale*).
- C) The distribution is positively skewed.

### Question #18 of 117

Annual Returns on ABC Mutual Fund									
Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
11.0%	12.5%	8.0%	9.0%	13.0%	7.0%	15.0%	2.0%	-16.5%	11.0%

What are the arithmetic mean return and the geometric mean return, respectively, for ABC Mutual Fund for the period Year 1 to Year 10?

- A) 8.2%; 6.8%.
- B) 7.2%; 5.6%.
- C) 7.2%; 6.8%.

### Question #19 of 117

An investor has a \$15,000 portfolio consisting of \$10,000 in stock A with an expected return of 20% and \$5,000 in stock B with an expected return of 10%. What is the investor's expected return on the portfolio?

- A) 7.9%.
- B) 16.7%.
- C) 12.2%.

### Question #20 of 117

A portfolio is equally invested in Stock A, with an expected return of 6%, and Stock B, with an expected return of 10%, and a risk-free asset with a return of 5%. The expected return on the portfolio is:

- A) 7.0%.
  - B) 7.4%.
  - C) 8.0%.
- 

### Question #21 of 117

For the last four years, the returns for XYZ Corporation's stock have been 10.4%, 8.1%, 3.2%, and 15.0%. The equivalent compound annual rate is:

- A) 9.2%.
  - B) 9.1%.
  - C) 8.9%.
- 

### Question #22 of 117

The following table provides average return and variance of returns for portfolio managers Bob, Mark, and Rick:

	<u>Bob</u>	<u>Mark</u>	<u>Rick</u>
Average Return (%)	15	13	9
Variance	81	49	36

Which of these managers has the best risk-adjusted return, as measured by the Sharpe Ratio, if the risk-free rate is 4%?

- A) Bob.
  - B) Rick.
  - C) Mark.
- 

### Question #23 of 117

Which of the following statements about the median is *least* accurate? It is:

- A) more affected by extreme values than the mean.
  - B) equal to the 50<sup>th</sup> percentile.
  - C) equal to the mode in a normal distribution.
- 

### Question #24 of 117

Michael Philizaire is studying for the Level I CFA examination. During his review of measures of central tendency, he decides to calculate the geometric average of the appreciation/depreciation of his home over the last five years. Using comparable sales and market data he obtains from a local real estate appraiser, Philizaire calculates the year-to-year percentage change in the value of his home as follows: 20, 15, 0, -5, -5. The geometric return is *closest* to:

- A) 0.00%.
  - B) 4.49%.
  - C) 11.60%.
- 

### Question #25 of 117

Use the results from the following survey of 500 firms to answer the question.

Number of Employees	Frequency
300 up to 400	40
400 up to 500	62
500 up to 600	78
600 up to 700	101
700 up to 800	131
800 up to 900	88

The cumulative relative frequency of the second interval (400 to 500) is:

- A) 10.2%.
  - B) 20.4%.
  - C) 12.4%.
- 

### Question #26 of 117

The owner of a company has recently decided to raise the salary of one employee, who was already making the highest salary in the company, by 40%. Which of the following value(s) is (are) expected to be affected by this raise?

- A) mean only.
  - B) median only.
  - C) mean and median only.
- 

### Question #27 of 117



Which of the following statements regarding the terms population and sample is *least* accurate?

- A) A descriptive measure of a sample is called a statistic.
  - B) A sample's characteristics are attributed to the population as a whole.
  - C) A sample includes all members of a specified group.
- 

### Question #28 of 117

How is the relative frequency of an interval computed?

- A) Dividing the frequency of that interval by the sum of all frequencies.
  - B) Subtracting the lower limit of the interval by the upper limit.
  - C) Dividing the sum of the two interval limits by 2.
- 

### Question #29 of 117

What does it mean to say that an observation is at the sixty-fifth percentile?

- A) 65% of all the observations are above that observation.
  - B) 65% of all the observations are below that observation.
  - C) The observation falls within the 65th of 100 intervals.
- 

### Question #30 of 117

Which of the following statements regarding skewness is *least* accurate?

- A) In a skewed distribution, 95% of all values will lie within plus or minus two standard deviations of the mean.
  - B) A distribution that is not symmetrical has skew not equal to zero.
  - C) A positively skewed distribution is characterized by many small losses and a few extreme gains.
- 

### Question #31 of 117

If the historical mean return on an investment is 2.0% and the standard deviation is 8.8%, what is the coefficient of variation (CV)?

- A) 1.76.
- B) 4.40.
- C) 6.80.

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### Question #32 of 117

Annual Returns on ABC Mutual Fund									
20X0	20X1	20X2	20X3	20X4	20X5	20X6	20X7	20X8	20X9
11.0%	12.5%	8.0%	9.0%	13.0%	7.0%	15.0%	2.0%	-16.5%	11.0%

If the risk-free rate was 4.0% during the period, what is the Sharpe ratio for ABC Mutual Fund?

- A) 0.35.
  - B) 0.52.
  - C) 0.68.
- 

### Question #33 of 117

Use the results from the following survey of 500 firms to answer the question.

Number of Employees	Frequency
300 up to 400	40
400 up to 500	62
500 up to 600	78
600 up to 700	101
700 up to 800	131
800 up to 900	88

The width of each interval (class) for this frequency table is:

- A) 100
  - B) 50
  - C) 101
- 

### Question #34 of 117

Which measure of central tendency can be used for both numerical and categorical variables?

- A) Mean.
  - B) Mode.
  - C) Median.
-

### Question #35 of 117

Given the following frequency distribution:

Return	Frequency
-10% up to 0%	5
0% up to 10%	7
10% up to 20%	9
20% up to 30%	6
30% up to 40%	3

What is the relative frequency of the 0% to 10% interval?

- A) 23.3%.
  - B) 40.0%.
  - C) 33.3%.
- 

### Question #36 of 117

In a positively skewed distribution, the:

- A) median equals the mean.
  - B) mean is greater than the median.
  - C) mean is less than the median.
- 

### Question #37 of 117

Assume that the following returns are a sample of annual returns for firms in the clothing industry. Given the following sample of returns, what are the sample variance and standard deviation respectively?

Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
15%	2%	5%	(7%)	0%

- A) 51.6; 7.2.
  - B) 32.4; 5.7.
  - C) 64.5; 8.0.
- 

### Question #38 of 117

Which of the following statements concerning a distribution with positive skewness and positive excess kurtosis is *least* accurate?

- A) It has fatter tails than a normal distribution.
  - B) The mean will be greater than the mode.
  - C) It has a lower percentage of small deviations from the mean than a normal distribution.
- 

### Question #39 of 117

The following data points are observed returns.

4.2%, 6.8%, 7.0%, 10.9%, 11.6%, 14.4%, 17.0%, 19.0%, 22.5%

What return lies at the 70th percentile (70% of returns lie below this return)?

- A) 19.0%.
  - B) 14.4%.
  - C) 17.0%.
- 

### Question #40 of 117

Given the following annual returns, what are the geometric and arithmetic mean returns, respectively?

2002	2003	2004	2005	2006
15%	2%	5%	-7%	0%

- A) 2.75%; 3.00%.
  - B) 1.45%; 3.00%.
  - C) 2.75%; 5.80%.
- 

### Question #41 of 117

In a frequency distribution histogram, the frequency of an interval is given by the:

- A) width of the corresponding bar.
  - B) height of the corresponding bar.
  - C) height multiplied by the width of the corresponding bar.
- 

### Question #42 of 117

Regardless of the shape of a distribution, according to Chebyshev's Inequality, what is the minimum percentage of observations that will lie within  $\pm$  two standard deviations of the mean?

- A) 75%.
  - B) 89%.
  - C) 68%.
- 

### Question #43 of 117

An investor has a portfolio with 10% cash, 30% bonds, and 60% stock. If last year's return on cash was 2.0%, the return on bonds was 9.5%, and the return on stock was 25%, what was the return on the investor's portfolio?

- A) 36.50%.
  - B) 18.05%.
  - C) 22.30%.
- 

### Question #44 of 117

An investor has a portfolio with 10% cash, 30% bonds, and 60% stock. Last year, the cash returns was 2.0%, the bonds' return was 9.5%, and the stocks' return was -32.5%. What was the return on the investor's portfolio?

- A) -7.00%.
  - B) -33.33%.
  - C) -16.45%.
- 

### Question #45 of 117

The mean monthly return on a sample of small stocks is 4.56% with a standard deviation of 3.56%. What is the coefficient of variation?

- A) 84%.
  - B) 78%.
  - C) 128%.
- 

### Question #46 of 117

A distribution that has positive excess kurtosis is:

- A) more peaked than a normal distribution.
- B) less peaked than a normal distribution.

C) more skewed than a normal distribution.

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### Question #47 of 117

The returns for individual assets in a portfolio are shown below:

Assets	Return (%)
A	1.3
B	1.4
C	2.2
D	3.4
E	1.7

What is the population standard deviation of the returns?

A) 0.56%.

B) 1.71%.

C) 0.77%.

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### Question #48 of 117

Returns for a portfolio over the last four years are shown below. Treating these returns as a sample, what is their coefficient of variation (CV)?

Year	Return
1	17.0%
2	12.2%
3	3.9%
4	-8.4%

A) 0.55.

B) 1.80.

C) 1.56.

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### Question #49 of 117

Which one of the following alternatives *best* describes the primary use of descriptive statistics? Descriptive statistics are used to:

- A) arrive at estimates regarding a large set of data regarding the statistical characteristics of a smaller sample.
- B) obtain data about the characteristics of any data set that can be used to assess the likelihood of the occurrence of future events.
- C) summarize important characteristics of large data sets.
- 

### Question #50 of 117

The weights and returns for individual positions in a portfolio are shown below:

Position	Mkt. Value at 1/1/05 (\$MM)	Return for 2005 (%)
A	1.3	-2.0
B	1.4	-4.2
C	2.2	+6.4
D	3.9	+2.1
E	1.7	-0.8

What is the return on the portfolio?

- A) +1.18%.
- B) -1.20%.
- C) +1.50%.
- 

### Question #51 of 117

In a negatively skewed distribution, what is the order (from lowest value to highest) for the distribution's mode, mean, and median values?

- A) Mode, mean, median.
- B) Mean, median, mode.
- C) Median, mode, mean.
- 

### Question #52 of 117

Distribution X has a mean of 10 and a standard deviation of 20. Distribution Y is identical to Distribution X in all respects except that each observation in Distribution Y is three times the value of a corresponding observation in Distribution X. The mean and standard deviation of Distribution Y are *closest* to:

<u>Mean</u>	<u>Standard</u>
	<u>deviation</u>

- A) 30                      20
  - B) 10                      60
  - C) 30                      60
- 

### Question #53 of 117

Which of the following statements about histograms and frequency polygons is *least* accurate?

- A) A frequency polygon is constructed by plotting the midpoint of each interval on the horizontal axis.
  - B) A histogram and a frequency polygon both plot the absolute frequency on the vertical axis.
  - C) A histogram connects points with a straight line.
- 

### Question #54 of 117

What is the compound annual growth rate for stock A which has annual returns of 5.60%, 22.67%, and -5.23%?

- A) 8.72%.
  - B) 6.00%.
  - C) 7.08%.
- 

### Question #55 of 117

Which one of the following alternatives *best* describes the primary use of inferential statistics? Inferential statistics are used to:

- A) summarize the important characteristics of a large data set based on statistical characteristics of a smaller sample.
  - B) make forecasts based on large data sets.
  - C) make forecasts, estimates or judgments about a large set of data based on statistical characteristics of a smaller sample.
- 

### Question #56 of 117

A portfolio of options had a return of 22% with a standard deviation of 20%. If the risk-free rate is 7.5%, what is the Sharpe ratio for the portfolio?

- A) 0.568.



B) 0.725.

C) 0.147.

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### Question #57 of 117

A distribution with a mean that is less than its median *most likely*.

A) is positively skewed.

B) is negatively skewed.

C) has negative excess kurtosis.

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### Question #58 of 117

Claude Bellow, CFA, is an analyst with a real estate focused investment firm. He asks his assistant to gather annual return information on a large office building and on a (REIT) real estate investment trust with diverse holdings. The following tables summarize the information.

Table 1: Annual returns (in %)					
Asset	Year 1	Year 2	Year 3	Year 4	Year 5
REIT	25.0	20.0	5.0	-5.0	13.0
Office Building	15.0	5.0	-5.0	-2.0	13.0

Table 2: Mean and Dispersion Information		
Asset	Mean Return*	Variance
REIT	11.6%	114.24
Office Building	5.2%	62.56

\* Calculated using the arithmetic mean.

Which of the following statements about the coefficient of variation of the two assets is *least* accurate?

A) The coefficient of variation of the office building returns is approximately 1.52.

B) The mean of the squared deviations from the arithmetic mean of the office building is less than that of the REIT.

C) There is more dispersion relative to the mean in the distribution of the REIT returns when compared to the distribution of the returns for the office building.

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### Question #59 of 117

Trina Romel, mutual fund manager, is taking over a poor-performing fund from a colleague. Romel wants to calculate the return on the portfolio. Over the last five years, the fund's annual percentage returns were: 25, 15, 12, -8, and -14.

Determine if the geometric return of the fund will be less than or greater than the arithmetic return and calculate the fund's geometric return:

- | <u>Geometric<br/>Return</u> | <u>Geometric compared to<br/>Arithmetic</u> |
|-----------------------------|---|
| A) 12.86%                   | greater than                                |
| B) 4.96%                    | less than                                   |
| C) 4.96%                    | greater than                                |
- 

### Question #60 of 117

According to Chebyshev's Inequality, for any distribution, what is the minimum percentage of observations that lie within three standard deviations of the mean?

- A) 75%.
- B) 89%.
- C) 94%.
- 

### Question #61 of 117

Given the following frequency distribution:

Return	Frequency
-10% up to 0%	5
0% up to 10%	7
10% up to 20%	9
20% up to 30%	6
30% up to 40%	3

What is the cumulative relative frequency of the 20% up to 30% return interval?

- A) 10%.
- B) 70%
- C) 90%.
- 

### Question #62 of 117

What is the coefficient of variation for a distribution with a mean of 10 and a variance of 4?

- A) 40%.
  - B) 25%.
  - C) 20%.
- 

### Question #63 of 117

An investor is considering two investments. Stock A has a mean annual return of 16% and a standard deviation of 14%. Stock B has a mean annual return of 20% and a standard deviation of 30%. Calculate the coefficient of variation (CV) of each stock and determine if Stock A has less dispersion or more dispersion relative to B. Stock A's CV is:

- A) 1.14, and thus has more dispersion relative to the mean than Stock B.
  - B) 0.875, and thus has less dispersion relative to the mean than Stock B.
  - C) 1.14, and thus has less dispersion relative to the mean than Stock B.
- 

### Question #64 of 117

In a positively skewed distribution, what is the order (from lowest value to highest) for the distribution's mode, mean, and median values?

- A) Mode, median, mean.
  - B) Mode, mean, median.
  - C) Mean, median, mode.
- 

### Question #65 of 117

Given the following set of data:

17, 3, 13, 3, 5, 9, 8

The value 8 is *most accurately* described as the:

- A) mean.
  - B) mode.
  - C) median.
- 

### Question #66 of 117

Consider the following set of stock returns: 12%, 23%, 27%, 10%, 7%, 20%, 15%. The third quartile is:

- A) 23%.
  - B) 21.5%.
  - C) 20.0%.
- 

### Question #67 of 117

Use the results from the following survey of 500 firms to answer the question.

Number of Employees	Frequency
300 up to 400	40
400 up to 500	62
500 up to 600	78
600 up to 700	101
700 up to 800	131
800 up to 900	88

The frequency of the third class is:

- A) 180.
  - B) 78.
  - C) 156.
- 

### Question #68 of 117

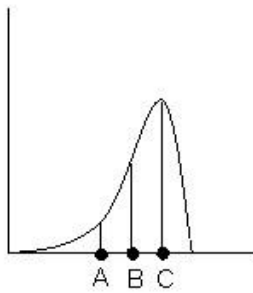
Given the following annual returns, what is the mean absolute deviation?

2000	2001	2002	2003	2004
15%	2%	5%	-7%	0%

- A) 22.0%.
  - B) 3.0%.
  - C) 5.6%.
- 

### Question #69 of 117

Consider the following graph of a distribution for the prices of various bottles of champagne.



Which of the following statements regarding the distribution is *least* accurate?

- A) The distribution is negatively skewed.
- B) Point A represents the mode.
- C) The mean value will be less than the mode.

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### Question #70 of 117

If a distribution is skewed:

- A) each side of a return distribution is the mirror image of the other.
- B) it will be more or less peaked reflecting a greater or lesser concentration of returns around the mean.
- C) the magnitude of positive deviations from the mean is different from the magnitude of negative deviations from the mean.

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### Question #71 of 117

Which of the following statements about interpreting skewness and kurtosis is *least* accurate?

- A) A distribution that is skewed left has more frequent occurrences of large negative outcomes compared to a normal distribution.
- B) Positive values of kurtosis indicate a distribution that has fatter tails than a normal distribution.
- C) Values of relative skewness in excess of 0.5 in absolute value are interpreted as indicating that a distribution is significantly skewed.

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### Question #72 of 117

Which of the following indicates the frequency of an interval in a frequency distribution histogram?

- A) Horizontal logarithmic scale.
- B) Width of the corresponding bar.

C) Height of the corresponding bar.

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### Question #73 of 117

Find the respective mean and the mean absolute deviation (MAD) of a series of stock market returns.

Year 1	14%
Year 2	20%
Year 3	24%
Year 4	22%

- A) 20%; 3%.
- B) 22%; 3%.
- C) 20%; 12%.
- 

### Question #74 of 117

A distribution of returns that has a greater percentage of small deviations from the mean and a greater percentage of large deviations from the mean compared to a normal distribution:

- A) has positive excess kurtosis.
- B) has negative excess kurtosis.
- C) is positively skewed.
- 

### Question #75 of 117

An investor has the following assets:

- \$5,000 in bonds with an expected return of 8%.
- \$10,000 in equities with an expected return of 12%.
- \$5,000 in real estate with an expected return of 10%.

What is the portfolio's expected return?

- A) 10.00%.
- B) 11.00%.
- C) 10.50%.
- 

### Question #76 of 117

A stock had the following quarterly holding period returns over the last six quarters: 1.5%, 2.0%, -0.9%, 4.4%, 2.3%, and -1.7%. The effective annual rate of return over this period is *closest* to:

- A) 5.08%.
  - B) 5.06%.
  - C) 5.14%.
- 

### Question #77 of 117

For the past three years, Acme Corp. has generated the following sample returns on equity (ROE): 4%, 10%, and 1%. What is the sample variance of the ROE over the last three years?

- A) 21.0(%<sup>2</sup>).
  - B) 21.0%.
  - C) 4.6%.
- 

### Question #78 of 117

Which of the following statements concerning kurtosis is *least* accurate?

- A) A leptokurtic distribution has fatter tails than a normal distribution.
  - B) A distribution that is more peaked than a normal distribution is leptokurtic.
  - C) A leptokurtic distribution has excess kurtosis less than zero.
- 

### Question #79 of 117

Monthly returns for a set of small cap stocks are 1.3%, 0.8%, 0.5%, 3.4%, -3.5%, -1.2%, 1.8%, 2.1%, and 1.5%. An analyst constructs a frequency distribution and a frequency polygon using the following intervals: -4.0% to -2.0%, -2.0% to 0.0%, 0.0% to 2.0%, and 2.0% to 4.0%. Which of the following statements about these data presentations is *least* accurate?

- A) The relative frequency of the interval -2.0% to 0.0% equals the relative frequency of the interval 2.0% to 4.0%.
  - B) A frequency polygon plots the midpoint of each interval on the horizontal axis and the absolute frequency of that interval on the vertical axis.
  - C) The absolute frequency of the interval 0.0% to 2.0% is 5.
- 

### Question #80 of 117

A higher Sharpe ratio indicates:

- A)** lower volatility of returns.
  - B)** a higher excess return per unit of risk.
  - C)** a lower risk per unit of return.
- 

### Question #81 of 117

The mean monthly return on U.S. Treasury bills (T-bills) is 0.42%. The mean monthly return for an index of small stocks is 4.56%, with a standard deviation of 3.56%. What is the Sharpe measure for the index of small stocks?

- A)** 1.16%.
  - B)** 16.56%.
  - C)** 10.60%.
- 

### Question #82 of 117

If a distribution is positively skewed, then generally:

- A)** mean > median > mode.
  - B)** mean < median < mode.
  - C)** mean > median < mode.
- 

### Question #83 of 117

Twenty students take an exam. The percentages of questions they answer correctly are ranked from lowest to highest as follows:

32 49 57 58 61  
62 64 66 67 67  
68 69 71 72 72  
74 76 80 82 83

In a frequency distribution from 30% to 90% that is divided into six equal-sized intervals, the absolute frequency of the sixth interval is:

- A)** 2
  - B)** 4
  - C)** 3
-



### Question #84 of 117

Which of the following is *least likely* a measure of dispersion?

- A) Percentile.
  - B) Variance.
  - C) Range.
- 

### Question #85 of 117

Portfolio A earned a return of 10.23% and had a standard deviation of returns of 6.22%. If the return over the same period on Treasury bills (T-bills) was 0.52% and the return to Treasury bonds (T-bonds) was 4.56%, what is the Sharpe ratio of the portfolio?

- A) 0.91.
  - B) 1.56.
  - C) 0.56.
- 

### Question #86 of 117

Which of the following statements about statistical concepts is *least* accurate?

- A) The coefficient of variation is useful when comparing dispersion of data measured in different units or having large differences in their means.
  - B) For a normal distribution, only 95% of the observations lie within  $\pm 3$  standard deviations from the mean.
  - C) For any distribution, based on Chebyshev's Inequality, 75% of the observations lie within  $\pm 2$  standard deviations from the mean.
- 

### Question #87 of 117

Which of the following statements regarding frequency distributions is *least* accurate? Frequency distributions:

- A) work with all types of measurement scales.
  - B) organize data into overlapping groups.
  - C) summarize data into a relatively small number of intervals.
- 

### Question #88 of 117

Which of the following sets of data is *most accurately* described as a sample?

- A) Years of higher education of the portfolio managers at a mutual fund.
  - B) Annual returns on an index of common stocks over a recent 10-year period.
  - C) Year-end assets under management for each mutual fund registered with a securities regulator.
- 

### Question #89 of 117

A distribution that is more peaked than normal is:

- A) platykurtic.
  - B) leptokurtic.
  - C) skewed.
- 

### Question #90 of 117

Which of the following statements about kurtosis is *least* accurate? Kurtosis:

- A) is used to reflect the probability of extreme outcomes for a return distribution.
  - B) measures the peakedness of a distribution reflecting a greater or lesser concentration of returns around the mean.
  - C) describes the degree to which a distribution is not symmetric about its mean.
- 

### Question #91 of 117

When creating intervals around the mean to indicate the dispersion of outcomes, which of the following measures is the *most* useful? The:

- A) variance.
  - B) standard deviation.
  - C) median.
- 

### Question #92 of 117

What are the median and the third quintile of the following data points, respectively?

9.2%, 10.1%, 11.5%, 11.9%, 12.2%, 12.8%, 13.1%, 13.6%, 13.9%, 14.2%, 14.8%, 14.9%, 15.4%

- A) 13.1%; 13.6%.
- B) 12.8%; 13.6%.

C) 13.1%; 13.7%.

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### Question #93 of 117

The respective arithmetic mean and geometric mean returns of the following series of stock market returns are:

Year 1	14%
Year 2	6%
Year 3	-5%
Year 4	20%

A) 8.90%; 8.62%.

B) 8.75%; 8.34%.

C) 8.75%; 8.62%.

---

### Question #94 of 117

In a skewed distribution, what is the minimum amount of observations that will fall between  $\pm 1.5$  standard deviations from the mean?

A) 95%.

B) 56%.

C) 44%.

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### Question #95 of 117

Which of the following statements about a normal distribution is *least* accurate?

A) A normal distribution has excess kurtosis of three.

B) Approximately 68% of the observations lie within  $\pm 1$  standard deviation of the mean.

C) The mean and variance completely define a normal distribution.

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### Question #96 of 117

Which of the following *best* describes a frequency distribution? A frequency distribution is a grouping of:

A) data into groups, the numerical order of which does not matter

B) data into non-overlapping intervals

C) measures used to describe a population

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### Question #97 of 117

Johnson Inc. manages a growth portfolio of equity securities that has had a mean monthly return of 1.4% and a standard deviation of returns of 10.8%. Smith Inc. manages a blended equity and fixed income portfolio that has had a mean monthly return of 1.2% and a standard deviation of returns of 6.8%. The mean monthly return on Treasury bills has been 0.3%. Based on the Sharpe ratio, the:

- A) performance of the Smith portfolio is preferable to the performance of the Johnson portfolio.
  - B) performance of the Johnson portfolio is preferable to the performance of the Smith portfolio.
  - C) Johnson and Smith portfolios have exhibited the same risk-adjusted performance.
- 

### Question #98 of 117

Which of the following is an example of a parameter?

- A) Sample standard deviation.
  - B) Population variance.
  - C) Sample mean.
- 

### Question #99 of 117

What is the seventh decile of the following data points?

81	84	91	97	102	108	110	112	115	121
128	135	138	141	142	147	153	155	159	162

- A) 141.7.
  - B) 141.0.
  - C) 142.0.
- 

### Question #100 of 117

Use the results from the following survey of 500 firms to answer the question.

Number of Employees	Frequency
300 up to 400	40
400 up to 500	62
500 up to 600	78
600 up to 700	101
700 up to 800	131
800 up to 900	88

The number of classes in this frequency table is:

- A) 6.
  - B) 600.
  - C) 5.
- 

### Question #101 of 117

If a distribution is positively skewed:

- A) the mode is greater than the median.
  - B) the mean is greater than the median.
  - C) the mode is greater than the mean.
- 

### Question #102 of 117

Which measure of scale has a true zero point as the origin?

- A) Ordinal scale.
  - B) Nominal scale.
  - C) Ratio scale.
- 

### Question #103 of 117

Given the following frequency distribution:

Interval	Frequency
10 up to 30	5
30 up to 50	10
50 up to 70	15
70 up to 90	5

Which of the following statements is *least* accurate?

- A) The absolute frequency of the third interval is 15.
  - B) The number of observations is greater than 30.
  - C) The relative frequency of the second interval is less than 15%.
- 

### Question #104 of 117

Given the following sample data, find the sample standard deviation of returns for Stock A and for Stock B.

	Stock A	Stock B
Year 1	16%	20%
Year 2	20%	24%
Year 3	12%	10%

Std. Dev. A      Std. Dev. B

- A) 4.0%              5.9%
  - B) 4.0%              7.2%
  - C) 3.3%              5.9%
- 

### Question #105 of 117

A summary measure that is computed to describe a population characteristic from a sample is called a:

- A) census.
  - B) parameter.
  - C) statistic.
- 

### Question #106 of 117

For the investments shown in the table below:

Investment	Return (%)
A	12
B	14
C	9
D	13
E	7
F	8
G	12

Which of the following statements is *most accurate*?

- A) The median is equal to the mode.
  - B) The mean is equal to the mode.
  - C) The mean is equal to the median.
- 

### Question #107 of 117

Which of the following statements about the arithmetic mean is *least* accurate?

- A) The arithmetic mean is the only measure of central tendency where the sum of the deviations of each observation from the mean is always zero.
  - B) If the distribution is skewed to the left then the mean will be greater than the median.
  - C) The arithmetic mean of a frequency distribution is equal to the sum of the class frequency times the midpoint of the frequency class all divided by the number of observations.
- 

### Question #108 of 117

The mean monthly return on (U.S. Treasury bills) T-bills is 0.42% with a standard deviation of 0.25%. What is the coefficient of variation?

- A) 168%.
  - B) 84%.
  - C) 60%.
- 

### Question #109 of 117

Fifty mutual funds are ranked according to performance. The five best performing funds are assigned the number 1, while the five worst performing funds are assigned the number 10. This is an example of a(n):

- A) interval scale.
  - B) ordinal scale.
  - C) nominal scale.
- 

### Question #110 of 117

What is the main difference between descriptive statistics and inferential statistics? Descriptive statistics are:

- A) used to summarize a large data set while inferential statistics involves procedures used to make forecasts or judgments about a large data set by examining a smaller sample.
  - B) used to make forecasts about the likelihood of upcoming events while inferential statistics are used to summarize any data set.
  - C) used to summarize data while inferential statistics are used to obtain precise information about a large data set.
- 

### Question #111 of 117

Which of the following statements concerning skewness is *least* accurate? A distribution with:

- A) a distribution with skew equal to 1 is not symmetrical.
  - B) positive skewness has a long left tail.
  - C) negative skewness has a large number of outliers on its left side.
- 

### Question #112 of 117

The mean and standard deviation of returns for Stock A is represented below.

	Arithmetic Mean	Standard Deviation
Stock A	20%	8%

The coefficient of variation of Stock A is:

- A) 0.4
  - B) 3
  - C) 2.5
- 

### Question #113 of 117



Assume a sample of beer prices is negatively skewed. Approximately what percentage of the distribution lies within plus or minus 2.40 standard deviations of the mean?

- A) 58.3%.
  - B) 82.6%.
  - C) 95.5%.
- 

### Question #114 of 117

One year ago, an investor made five separate investments with the invested amounts and returns shown below. What is the arithmetic and geometric mean return on all of the investor's investments respectively?

Investment	Invested Amount	Return (%)
A	10,000	12
B	10,000	14
C	10,000	9
D	20,000	13
E	20,000	7

- A) 11.00; 10.97.
  - B) 11.64; 10.97.
  - C) 11.00; 10.78.
- 

### Question #115 of 117

Given a population of 200, 100, and 300, the coefficient of variation is *closest to*:

- A) 100%.
  - B) 30%.
  - C) 40%.
- 

### Question #116 of 117

Following is the population of temperatures (in degrees Celsius) observed during a ten-day period of January taken in San Francisco at the Ferry Building.

Day/°C	1	2	3	4	5	6	7	8	9	10
High	9	11	13	14	13	13	11	14	15	17
Low	3	6	6	7	10	10	9	6	8	4

- The population of high temperatures is normally distributed with a mode of 13°C and a coefficient of variation (CV) of 0.165.
- The population of low temperatures is positively skewed with a mean of 6.9°C and a CV of 0.328.
- A sample of high temperatures taken on odd days (5 data points) has a mean of 12.2°C and a variance of 5.20.
- A sample of low temperatures taken on odd days (5 data points) has a mean of 7.2°C.

Which of the following statements about the temperatures in San Francisco is *least* accurate?

- A)** For the low temperatures, the mode is less than 6.9°C.
- B)** For the low temperatures, the population standard deviation is less than the sample standard deviation.
- C)** For the high temperatures, the population variance is greater than the sample variance.

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### Question #117 of 117

If stock X's expected return is 30% and its expected standard deviation is 5%, Stock X's expected coefficient of variation is:

- A)** 0.167.
- B)** 1.20.
- C)** 6.0.