

### Question #1 of 142

An analyst gathered the following data:

- An earnings retention rate of 40%.
- An ROE of 12%.
- The stock's beta is 1.2.
- The nominal risk free rate is 6%.
- The expected market return is 11%.

Assuming next year's earnings will be \$4 per share, the stock's current value is *closest* to:

A) \$26.67.



B) \$33.32.



C) \$45.45.



#### Explanation

Dividend payout = 1 – earnings retention rate = 1 – 0.4 = 0.6

$$R_S = R_f + \beta(R_M - R_f) = 0.06 + 1.2(0.11 - 0.06) = 0.12$$

$$g = (\text{retention rate})(\text{ROE}) = (0.4)(0.12) = 0.048$$

$$D_1 = E_1 \times \text{payout ratio} = \$4.00 \times 0.60 = \$2.40$$

$$\text{Price} = D_1 / (k - g) = \$2.40 / (0.12 - 0.048) = \$33.32$$

(Study Session 15, Module 49.3, LOS 49.j)

### Question #2 of 142

A firm pays an annual dividend of \$1.15. The risk-free rate (RF) is 2.5%, and the total risk premium (RP) for the stock is 7%. What is the value of the stock, if the dividend is expected to remain constant?

A) \$25.00.



B) \$12.10.



C) \$16.03.



#### Explanation




If the dividend remains constant,  $g = 0$ .

$$P = D_1 / (k - g) = 1.15 / (0.095 - 0) = \$12.10$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #3 of 142

The earnings multiplier model, derived from the dividend discount model, expresses a stock's P/E ratio ( $P_0/E_1$ ) as the :

- A) expected dividend payout ratio divided by the difference between the required return on equity and the expected dividend growth rate. 
- B) expected dividend payout ratio divided by the sum of the expected dividend growth rate and the required return on equity. 
- C) expected dividend in one year divided by the difference between the required return on equity and the expected dividend growth rate. 

**Explanation**

Starting with the dividend discount model  $P_0 = D_1 / (k_e - g)$ , and dividing both sides by  $E_1$  yields:  $P_0 / E_1 = (D_1 / E_1) / (k_e - g)$

Thus, the P/E ratio is determined by:




- The expected dividend payout ratio ( $D_1 / E_1$ ).
- The required rate of return on the stock ( $k_e$ ).
- The expected growth rate of dividends ( $g$ ).

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #4 of 142

If an analyst estimates the intrinsic value for a security that is different from its market value, the analyst should *most likely* take an investment position based on this difference if:

- A) the model used is not highly sensitive to its input values. 
- B) the security lacks a liquid market and trades infrequently. 
- C) many analysts independently evaluate the security. 

**Explanation**

In general, an analyst can be more confident about an estimate of intrinsic value if the model used is not highly sensitive to changes in its inputs. If a large number of analysts follow a security, its market value is more likely to be a reliable estimate of its intrinsic value. A security that does not trade frequently or in a liquid market may remain mispriced for an extended time, and thus may not result in a profit within the investment horizon even if the analyst's estimate of intrinsic value is correct.

(Study Session 15, Module 49.1, LOS 49.a)

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### Question #5 of 142

A stock has the following elements: last year's dividend = \$1, next year's dividend is 10% higher, the price will be \$25 at year-end, the risk-free rate is 5%, the market risk premium is 5%, and the stock's beta is 1.5. The stock's price is *closest to*:

- A) \$23.20. 
- B) \$23.50. 
- C) \$20.20. 

**Explanation**

Cost of equity capital = 5% + 1.5(5%) = 12.5%

$P_0 = (1.1 / 1.125) + (25 / 1.125) = \$23.20.$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #6 of 142

Using an infinite period dividend discount model, find the value of a stock that last paid a dividend of \$1.50. Dividends are expected to grow at 6 percent forever, the expected return on the market is 12 percent and the stock's beta is 0.8. The risk-free rate of return is 5 percent.

A) \$26.50.



B) \$34.57.



C) \$32.61.



#### Explanation

First find the required rate of return using the CAPM equation.

$$k = 0.05 + 0.8(0.12 - 0.05) = 10.6\%$$

$$\$1.50(1.06) / (0.106 - 0.06) = \$34.57$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #7 of 142

Which of the following is *least likely* a reason the price to cash flow (P/CF) model has grown in popularity?

A) CFs are generally more difficult to manipulate than earnings.



B) CFs are used extensively in valuation models.



C) CFs are more easily estimated than future dividends.



#### Explanation

CFs are not easier to estimate than dividends.

(Study Session 15, Module 49.3, LOS 49.i)

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### Question #8 of 142

Of the following types of firm, which is *most suitable* for P/B ratio analysis?

A) A service industry firm without significant fixed assets.



B) A firm with accounting standards consistent to other firms.



C) A firm with accounting standards different from other firms.



#### Explanation

Assuming consistent accounting standards across firms, P/B ratios can reveal signs of misvaluation across firms.

(Study Session 15, Module 49.3, LOS 49.i)

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### Question #9 of 142

A company has 8 percent preferred stock outstanding with a par value of \$100. The required return on the preferred is 5 percent. What is the value of the preferred stock?

A) \$100.00.



B) \$160.00.



C) \$152.81.



#### Explanation

The annual dividend on the preferred is  $\$100(.08) = \$8.00$ . The value of the preferred is  $\$8.00/0.05 = \$160.00$ .

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #10 of 142

An analyst gathered the following information about a company:

- The stock is currently trading at \$31.00 per share.
- Estimated growth rate for the next three years is 25%.
- Beginning in the year 4, the growth rate is expected to decline and stabilize at 8%.
- The required return for this type of company is estimated at 15%.
- The dividend in year 1 is estimated at \$2.00.

The stock is undervalued by approximately:

A) \$6.40.



B) \$15.70.



C) \$0.00.



#### Explanation

The high "supernormal" growth in the first three years and the decrease in growth thereafter signals that we should use a combination of the multi-period and finite dividend growth models (DDM) to value the stock.

*Step 1:* Determine the dividend stream through year 4

- $D_1 = \$2.00$  (given)
- $D_2 = D_1 \times (1 + g) = 2.00 \times (1.25) = \$2.50$
- $D_3 = D_2 \times (1 + g) = \$2.50 \times (1.25) = \$3.13$
- $D_4 = D_3 \times (1 + g) = \$3.13 \times (1.08) = \$3.38$

*Step 2:* Calculate the value of the stock at the end of year 3 (using  $D_4$ )

- $P_3 = D_4 / (k_e - g) = \$3.38 / (0.15 - 0.08) = \$48.29$

*Step 3:* Calculate the PV of each cash flow stream at  $k_e = 15\%$ , and sum the cash flows. *Note:* We suggest you clear the financial calculator memory registers before calculating the value. The present value of:

- $D_1 = \mathbf{1.74} = 2.00 / (1.15)^1$ , or FV = -2.00, N = 1, I/Y = 15, PV = 1.74
- $D_2 = \mathbf{1.89} = 2.50 / (1.15)^2$ , or FV = -2.50, N = 2, I/Y = 15, PV = 1.89
- $D_3 = \mathbf{2.06} = 3.13 / (1.15)^3$ , or FV = -3.13, N = 3, I/Y = 15, PV = 2.06
- $P_3 = \mathbf{31.75} = 48.29 / (1.15)^3$ , or FV = -48.29, N = 3, I/Y = 15, PV = 31.75
- Sum of cash flows = 37.44.
- Thus, the stock is undervalued by  $37.44 - 31.00 =$  approximately **6.40**.

*Note:* Future values are entered in a financial calculator as negatives to ensure that the PV result is positive. It does not mean that the cash flows are negative. Also, your calculations may differ slightly due to rounding. Remember that the question asks you to select the *closest* answer.

(Study Session 15, Module 49.1, LOS 49.a)

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## Question #11 of 142

Bybee is expected to have a temporary supernormal growth period and then level off to a "normal," sustainable growth rate forever. The supernormal growth is expected to be 25 percent for 2 years, 20 percent for one year and then level off to a normal growth rate of 8 percent forever. The market requires a 14 percent return on the company and the company last paid a \$2.00 dividend. What would the market be willing to pay for the stock today?

A) \$67.50.



B) \$52.68.



C) \$47.09.



**Explanation**

First, find the future dividends at the supernormal growth rate(s). Next, use the infinite period dividend discount model to find the expected price after the supernormal growth period ends. Third, find the present value of the cash flow stream.

$$D_1 = 2.00 (1.25) = 2.50 \quad (1.25) = D_2 = 3.125 \quad (1.20) = D_3 = 3.75$$

$$P_2 = 3.75 / (0.14 - 0.08) = 62.50$$

$$N = 1; I/Y = 14; FV = 2.50; \text{ compute } PV = 2.19.$$

$$N = 2; I/Y = 14; FV = 3.125; \text{ compute } PV = 2.40.$$

$$N = 2; I/Y = 14; FV = 62.50; \text{ compute } PV = 48.09.$$

$$\text{Now sum the PV's: } 2.19 + 2.40 + 48.09 = \$52.68.$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #12 of 142

A company's required return on equity is 15% and its dividend payout ratio is 55%. If its return on equity (ROE) is 17% and its beta is 1.40, then its sustainable growth rate is *closest* to:

A) 6.75%.



B) 7.65%.



C) 9.35%.



#### Explanation

Growth rate = (ROE)(Retention Ratio)

$$= (0.17)(0.45)$$

$$= 0.0765 \text{ or } 7.65\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #13 of 142

Use the following information and the dividend discount model to find the value of GoFlower, Inc.'s, common stock.

- Last year's dividend was \$3.10 per share.
- The growth rate in dividends is estimated to be 10% forever.
- The return on the market is expected to be 12%.
- The risk-free rate is 4%.
- GoFlower's beta is 1.1.

A) \$121.79.



B) \$26.64.



C) \$34.95.



#### Explanation

The required return for GoFlower is  $0.04 + 1.1(0.12 - 0.04) = 0.128$  or 12.8%. The expected dividend is  $(\$3.10)(1.10) = \$3.41$ . GoFlower's common stock is then valued using the infinite period dividend discount model (DDM) as  $(\$3.41) / (0.128 - 0.10) = \$121.79$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #14 of 142

Preferred stock *most likely* has a:

- A) fixed dividend and no maturity.
- B) fixed dividend and maturity.
- C) variable dividend and no maturity.



#### Explanation

Preferred stock typically pays a fixed dividend and does not mature.

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #15 of 142

The constant-growth dividend discount model would typically be most appropriate in valuing a stock of a:

- A) rapidly growing company.
- B) new venture expected to retain all earnings for several years.
- C) moderate growth, "mature" company.



#### Explanation

Remember, the infinite period DDM has the following assumptions:

- The stock pays dividends and they grow at a constant rate.
- The constant growth rate,  $g$ , continues for an infinite period.
- $k$  must be greater than  $g$ . If not, the math will not work.

If any one of these assumptions is not met, the model breaks down. The infinite period DDM doesn't work with growth companies. Growth companies are firms that currently have the ability to earn rates of return on investments that are currently above their required rates of return. The infinite period DDM assumes the dividend stream grows at a constant rate forever while growth companies have high growth rates in the early years that level out at some future time. The high early or supernormal growth rates will also generally exceed the required rate of return. Since the assumptions (constant  $g$  and  $k > g$ ) don't hold, the infinite period DDM cannot be used to value growth companies.

(Study Session 15, Module 49.2, LOS 49.h)

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### Question #16 of 142

A payment to shareholders in the form of additional shares instead of cash is a:

- A) reverse stock split.



B) stock dividend.



C) share repurchase.



#### Explanation

Stock dividends are dividends paid out in new shares of stock instead of cash. While a stock split has essentially the same effects as a stock dividend, a reverse stock split is the opposite, decreasing the number of shares held by each shareholder but increasing the share price proportionately. In a share repurchase, the company buys back shares so the number of shares in the investing public's hands decreases.

(Study Session 15, Module 49.1, LOS 49.c)

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### Question #17 of 142

Assume that a stock paid a dividend of \$1.50 last year. Next year, an investor believes that the dividend will be 20% higher and that the stock will be selling for \$50 at year-end. Assume a beta of 2.0, a risk-free rate of 6%, and an expected market return of 15%. What is the value of the stock?

A) \$40.32.



B) \$45.00.



C) \$41.77.



#### Explanation

Using the Capital Asset Pricing Model, we can determine the discount rate equal to  $0.06 + 2(0.15 - 0.06) = 0.24$ . The dividends next year are expected to be  $\$1.50 \times 1.2 = \$1.80$ . The present value of the future stock price and the future dividend are determined by discounting the expected cash flows at the discount rate of 24%:  $(50 + 1.8) / 1.24 = \$41.77$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #18 of 142

Which of the following statements concerning security valuation is *least* accurate?

A) The best way to value a company with no current dividend but who is expected to pay dividends in three years is to use the temporary supernormal growth (multistage) model.



B) The best way to value a company with high and unsustainable growth that exceeds the required return is to use the temporary supernormal growth (multistage) model.



C) A firm with a \$1.50 dividend last year, a dividend payout ratio of 40%, a return on equity of 12%, and a 15% required return is worth \$18.24.



#### Explanation

A firm with a \$1.50 dividend last year, a dividend payout ratio of 40%, a return on new investment of 12%, and a 15% required return is worth \$20.64. The growth rate is  $(1 - 0.40) \times 0.12 = 7.2\%$ . The expected dividend is then  $(\$1.50)(1.072) = \$1.61$ . The value is then  $(1.61) / (0.15 - 0.072) = \$20.64$ .

(Study Session 15, Module 49.2, LOS 49.h)

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### Question #19 of 142

An analyst estimates the intrinsic value of a stock to be equal to ¥1,567 per share. If the current market value of the stock is ¥1,487 per share, the stock is:

- A) overvalued.
- B) fairly valued.
- C) undervalued.



#### Explanation

If a stock's intrinsic value is greater than its market value, the stock is undervalued.

(Study Session 15, Module 49.1, LOS 49.a)

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### Question #20 of 142

A stock is expected to pay a dividend of \$1.50 at the end of each of the next three years. At the end of three years the stock price is expected to be \$25. The equity discount rate is 16 percent. What is the current stock price?

- A) \$24.92.
- B) \$19.39.
- C) \$17.18.



#### Explanation

The value of the stock today is the present value of the dividends and the expected stock price, discounted at the equity discount rate:

$$\$1.50/1.16 + \$1.50/1.16^2 + \$1.50/1.16^3 + \$25.00/1.16^3 = \$19.39$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #21 of 142

What is the value of a preferred stock that is expected to pay a \$5.00 annual dividend per year forever if similar risk securities are now yielding 8%?

- A) \$62.50.
- B) \$60.00.
- C) \$40.00.



#### Explanation




$$\$5.00/0.08 = \$62.50.$$

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #22 of 142

Which of the following is NOT an advantage of using price-to-book value (PBV) multiples in stock valuation?

- A) Book values are very meaningful for firms in service industries. 
- B) PBV ratios can be compared across similar firms if accounting standards are consistent. 
- C) Book value is often positive, even when earnings are negative. 

#### Explanation

Book values are NOT very meaningful for firms in service industries.

(Study Session 15, Module 49.3, LOS 49.m)




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### Question #23 of 142

Assume the following information for a stock:

Beta coefficient	= 1.50
Risk-free rate	= 6%
Expected rate of return on market	= 14%
Dividend payout ratio	= 30%
Expected dividend growth rate	= 11%

The estimated earnings multiplier (P/E ratio) is *closest* to:

- A) 3.33. 
- B) 10.00. 
- C) 4.29. 

#### Explanation

$$P/E = D/E1 / (k - g)$$

$$D/E1 = \text{Dividend payout ratio} = 0.3$$

$$g = 0.11$$

$$k = 6 + (1.5)(14 - 6) = 18\%$$



$$P/E = 0.3 / (0.18 - 0.11) = 0.3 / 0.07 = 4.29$$

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #24 of 142

Calculate the value of a preferred stock that pays an annual dividend of \$5.50 if the current market yield on AAA rated preferred stock is 75 basis points above the current T-Bond rate of 7%.

- A) \$78.57. 
- B) \$42.63. 

C) \$70.97.



#### Explanation

$$k_{\text{preferred}} = \text{base yield} + \text{risk premium} = 0.07 + 0.0075 = 0.0775$$

$$\text{Value}_{\text{preferred}} = \text{Dividend} / k_{\text{preferred}}$$

$$\text{Value} = 5.50 / 0.0775 = \$70.97$$

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #25 of 142

A company currently has a required return on equity of 14% and an ROE of 12%. All else equal, if there is an increase in a firm's dividend payout ratio, the stock's value will *most likely*:

A) either increase or decrease.



B) decrease.



C) increase.



#### Explanation

*Increase in dividend payout/reduction in earnings retention.* In this case, an increase in the dividend payout will likely *increase* the P/E ratio because a decrease in earnings retention will likely increase the P/E ratio. The logic is as follows: Because earnings retention impacts both the numerator (dividend payout) and denominator (g) of the P/E ratio, the impact of a change in earnings retention depends upon the relationship of  $k_e$  and ROE. If the company is earning a lower rate on new projects than the rate required by the market ( $\text{ROE} < k_e$ ), investors will likely prefer that the company pay out earnings rather than investing in lower-yield projects. Since an increase in the dividend payout would decrease earnings retention, the P/E ratio would rise, as investors will value the company higher if it retains a lower percentage of earnings.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #26 of 142

Because of dividend displacement of earnings, the net effect on firm value of increasing the dividend payout ratio is:

A) to decrease firm value.



B) indeterminate.



C) to increase firm value.



#### Explanation

The net effect on firm value of increasing the dividend payout ratio is ambiguous because the positive effect of larger dividends may be offset by a negative effect on the firm's sustainable growth rate. If increasing the payout ratio always increased firm value, all firms would have 100% payout ratios.

(Study Session 15, Module 49.3, LOS 49.j)

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## Question #27 of 142

An analyst gathered the following data for the Parker Corp. for the year ended December 31, 2005:

- $EPS_{2005} = \$1.75$
- $Dividends_{2005} = \$1.40$
- $Beta_{Parker} = 1.17$
- Long-term bond rate = 6.75%
- Rate of return S&P<sub>500</sub> = 12.00%

The firm has changed its dividend policy and now plans to pay out 60% of its earnings as dividends in the future. If the long-term growth rate in earnings and dividends is expected to be 5%, the appropriate price to earnings (P/E) ratio for Parker will be:

- A) 7.98.
- B) 9.14.
- C) 7.60.



### Explanation

Required rate of return on equity will be  $12.89\% = 6.75\% + 1.17(12.00\% - 6.75\%)$ .

$P/E \text{ Ratio} = 0.60 / (0.1289 - 0.0500) = 7.60$ .

(Study Session 15, Module 49.3, LOS 49.j)

## Question #28 of 142

The rationale for using dividend discount models to value equity is that the:

- A) intrinsic value of a stock is the present value of its future dividends.
- B) inputs are easily estimated and the model's estimates are robust.
- C) model works well for the finite period of time over which dividends are paid.



### Explanation

The rationale for dividend discount models is that the fundamental or intrinsic value of a stock is the present value of all its future dividends. Dividend discount models can be applied to either a finite or infinite stream of dividends. There are many ways to calculate the inputs and the estimated stock values may vary significantly with small changes in the inputs.

(Study Session 15, Module 49.2, LOS 49.e)

## Question #29 of 142

When a company's return on equity (ROE) is 12% and the dividend payout ratio is 60%, what is the implied sustainable growth rate of earnings and dividends?

- A) 7.8%.
- B) 4.0%.



C) 4.8%.



**Explanation**

$$g = \text{ROE} \times \text{retention ratio} = \text{ROE} \times (1 - \text{payout ratio}) = 12 (0.4) = 4.8\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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**Question #30 of 142**

Assume a company has earnings per share of \$5 and pays out 40% in dividends. The earnings growth rate for the next 3 years will be 20%. At the end of the third year the company will start paying out 100% of earnings in dividends and earnings will increase at an annual rate of 5% thereafter. If a 12% rate of return is required, the value of the company is approximately:

A) \$92.92.



B) \$102.80.



C) \$55.69.



**Explanation**

First, calculate the dividends in years 0 through 4: (We need  $D_4$  to calculate the value in Year 3)

$$D_0 = (0.4)(5) = 2$$

$$D_1 = (2)(1.2) = 2.40$$

$$D_2 = (2.4)(1.2) = 2.88$$

$$D_3 = E_3 = 5(1.2)^3 = 8.64$$

g after year 3 will be 5%, so

$$D_4 = 8.64 \times 1.05 = 9.07$$

Then, solve for the terminal value at the end of period 3 =  $D_4 / (k - g) = 9.07 / (0.12 - 0.05) = \$129.57$

$$\begin{aligned} \text{Present value of the cash flows} = \text{value of stock} &= 2.4 / (1.12)^1 + 2.88 / (1.12)^2 + 8.64 / (1.12)^3 + \\ &129.57 / (1.12)^3 = 2.14 + 2.29 + 6.15 + 92.22 = 102.80 \end{aligned}$$

(Study Session 15, Module 49.2, LOS 49.g)

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**Question #31 of 142**

The preferred stock of the Delco Investments Company has a par value of \$150 and a dividend of \$11.50. A shareholder's required return on this stock is 14%. What is the maximum price he would pay?

A) \$54.76.



B) \$150.00.



C) \$82.14.



**Explanation**




Value of preferred =  $D / k_p = \$11.50 / 0.14 = \$82.14$

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #32 of 142

One advantage of using price-to-book value (PBV) multiples for stock valuation is that:

- A) book value of a firm can never be negative. 
- B) it is a stable and simple benchmark for comparison to the market price. 
- C) most of the time it is close to the market value. 

#### Explanation




Book value provides a relatively stable measure of value that can be compared to the market price. For investors who mistrust the discounted cash flow estimates of value, it provides a much simpler benchmark for comparison. Book value may or may not be closer to the market value. A firm may have negative book value if it shows accounting losses consistently.

(Study Session 15, Module 49.3, LOS 49.i)

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### Question #33 of 142

Which of the following statements about the constant growth dividend discount model (DDM) is *least* accurate?

- A) In the constant growth DDM dividends are assumed to grow at a constant rate forever. 
- B) The constant growth DDM is used primarily for stable mature stocks. 
- C) For the constant growth DDM to work, the growth rate must exceed the required return on equity. 

#### Explanation

Dividends grow at constant rate forever.

Constant growth DDM is used for mature firms.




k must be greater than g.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #34 of 142

Asset-based valuation models are *most appropriate* for a firm that:

- A) has cyclical earnings. 
- B) is being liquidated. 
- C) has significant intangible assets. 

#### Explanation

Asset-based valuation models are appropriate for a firm that is being liquidated because when a firm ceases to operate as a going concern, its value to equity owners depends on the difference between the fair value of its assets and liabilities. Asset-based models are unlikely to be reliable for estimating the value of firms that have significant intangible assets because fair values of such assets are often difficult to determine. Such a firm may or may not have cyclical earnings.

(Study Session 15, Module 49.3, LOS 49.I)

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### Question #35 of 142

Assume that a firm has an expected dividend payout ratio of 20%, a required rate of return of 9%, and an expected dividend growth of 5%. What is the firm's estimated price-to-earnings (P/E) ratio?

A) 2.22.



B) 5.00.



C) 20.00.



#### Explanation

The price-to-earnings (P/E) ratio is equal to  $(D_1/E_1)/(k - g) = 0.2/(.09 - 0.05) = 5.00$ .

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #36 of 142

A company's growth rate in dividends and earnings can be estimated as the:

A) difference between the retention ratio and the return on equity.



B) product of the return on equity and the dividend payout ratio.



C) product of the retention ratio and the return on equity.



#### Explanation

Assuming past investments are stable and earnings are calculated to allow for maintenance of past earnings power, then the firm's expected dividend growth rate (g) can be defined as the firm's earnings plowback or retention rate (RR) times the return on the equity (ROE) portion of new investments. This growth rate is also called the sustainable growth rate.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #37 of 142

Calculate the value of a common stock that last paid a \$2.00 dividend if the required rate of return on the stock is 14 percent and the expected growth rate of dividends and earnings is 6 percent. What growth model is an example of this calculation?

Value of  
stock

Growth  
model

- |    |         |                    |   |
|----|---------|--------------------|---|
| A) | \$26.50 | Supernormal growth |  |
| B) | \$25.00 | Gordon growth      |  |
| C) | \$26.50 | Gordon growth      |  |

**Explanation**

$$\$2(1.06)/0.14 - 0.06 = \$26.50.$$

This calculation is an example of the Gordon Growth Model also known as the constant growth model.

(Study Session 15, Module 49.2, LOS 49.g)

### Question #38 of 142

A firm will not pay dividends until four years from now. Starting in year four dividends will be \$2.20 per share, the retention ratio will be 40%, and ROE will be 15%. If  $k = 10\%$ , what should be the value of the stock?

- |             |   |
|-------------|---|
| A) \$41.32. |    |
| B) \$58.89. |   |
| C) \$55.25. |  |

**Explanation**

$$g = \text{ROE} \times \text{retention ratio} = \text{ROE} \times b = 15 \times 0.4 = 6\%$$

Based on the growth rate we can calculate the expected price in year 3:

$$P_3 = D_4 / (k - g) = 2.2 / (0.10 - 0.06) = \$55$$

The stock value today is:

$$P_0 = \text{PV} (55) \text{ at } 10\% \text{ for } 3 \text{ periods} = \$41.32$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #39 of 142

The capital asset pricing model can be used to estimate which of the following inputs to the dividend discount model?

- |   |   |
|---|---|
| A) The required return on equity.         |  |
| B) The expected inflation rate.           |  |
| C) The expected growth rate in dividends. |  |

**Explanation**



The capital asset pricing model is a rate of return model that can be used to estimate a stock's required rate of return, given the nominal risk-free rate, the market risk premium, and the stock's beta:

$$k = R_{\text{nominal risk free rate}} + (\text{beta})(R_{\text{market}} - R_{\text{nominal risk free rate}}).$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #40 of 142

Witronix is a rapidly growing U.S. company that has increased free cash flow to equity and dividends at an average rate of 25% per year for the last four years. The present value model that is *most* appropriate for estimating the value of this company is a:

- A) single stage free cash flow to equity model.
- B) Gordon growth model.
- C) multistage dividend discount model.



#### Explanation

A multistage model is the most appropriate model because the company is growing dividends at a higher rate than can be sustained in the long run. Though the company may be able to grow dividends at a higher-than-sustainable 25% annual rate for a finite period, at some point dividend growth will have to slow to a lower, more sustainable rate. The Gordon growth model is appropriate to use for mature companies that have a history of increasing their dividend at a steady and sustainable rate. A single stage free cash flow to equity model is similar to the Gordon growth model, but values future free cash flow to equity rather than dividends.

(Study Session 15, Module 49.2, LOS 49.e)

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### Question #41 of 142

One advantage of price/sales (P/S) multiples over price to earnings (P/E) and price-to-book value (PBV) multiples is that:

- A) P/S is easier to calculate.
- B) P/S can be used for distressed firms.
- C) Regression shows a strong relationship between stock prices and sales.



#### Explanation

Unlike the PBV and P/E multiples, which can become negative and not meaningful, the price/sales multiple is meaningful even for distressed firms (that may have negative earnings or book value).

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #42 of 142

Given the following information, compute price/sales.

- Book value of assets = \$550,000.
- Total sales = \$200,000.
- Net income = \$20,000.
- Dividend payout ratio = 30%.
- Operating cash flow = \$40,000.
- Price per share = \$100.
- Shares outstanding = 1,000.
- Book value of liabilities = \$500,000.

A) 2.00X.



B) 0.50X.



C) 2.50X.



**Explanation**

Market value of equity = (\$100)(1000) = \$100,000

Price / Sales = \$100,000 / \$200,000 = 0.5X

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #43 of 142

Regarding the estimates required in the constant growth dividend discount model, which of the following statements is *most* accurate?

A) The model is most influenced by the estimates of "k" and "g."



B) The variables "k" and "g" are easy to forecast.



C) Dividend forecasts are less reliable than estimates of other inputs.



**Explanation**

The relationship between "k" and "g" is critical - small changes in the difference between these two variables results in large value fluctuations.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #44 of 142

If the payout ratio increases, the justified P/E multiple will:

A) increase, if we assume that the growth rate remains constant.



B) decrease, if we assume that the growth rate remains constant.



C) always increase.



**Explanation**

When payout ratio increases, the justified P/E multiple increases only if we assume that the growth rate will not change as a result.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #45 of 142

A company has just paid a \$2.00 dividend per share and dividends are expected to grow at a rate of 6% indefinitely. If the required return is 13%, what is the value of the stock today?

A) \$30.29.



B) \$34.16.



C) \$32.25.



#### Explanation

$$P_0 = D_1 / (k - g) = 2.12 / (0.13 - 0.06) = \$30.29$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #46 of 142

An argument against using the price-to-sales (P/S) valuation approach is that:

A) P/S ratios do not express differences in cost structures across companies.



B) sales figures are not as easy to manipulate or distort as earnings per share (EPS) and book value.



C) P/S ratios are not as volatile as price-to-earnings (P/E) multiples.



#### Explanation

P/S ratios do not express differences in cost structures across companies. Both remaining responses are advantages of the P/S ratios, not disadvantages.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #47 of 142

Assume that at the end of the next year, Company A will pay a \$2.00 dividend per share, an increase from the current dividend of \$1.50 per share. After that, the dividend is expected to increase at a constant rate of 5%. If an investor requires a 12% return on the stock, what is the value of the stock?

A) \$30.00.



B) \$31.78.



C) \$28.57.



#### Explanation

$$P_0 = D_1 / k - g$$

$$D_1 = \$2$$

$$g = 0.05$$

$$k = 0.12$$

$$P_0 = 2 / 0.12 - 0.05 = 2 / 0.07 = \$28.57$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #48 of 142

Day and Associates is experiencing a period of abnormal growth. The last dividend paid by Day was \$0.75. Next year, they anticipate growth in dividends and earnings of 25% followed by negative 5% growth in the second year. The company will level off to a normal growth rate of 8% in year three and is expected to maintain an 8% growth rate for the foreseeable future. Investors require a 12% rate of return on Day. The value of Day stock today is *closest* to:

A) \$18.65.



B) \$24.05.



C) \$20.70.



#### Explanation

First find the abnormal dividends:

$$D_1 = \$0.75 \times 1.25 = \$0.9375$$

$$D_2 = \$0.9375 \times 0.95 = \$0.89$$

$D_2$  is the first dividend that will grow at a constant rate. We can use this dividend in the constant growth DDM to get a value for the stock in period 1:

$$\$0.89 / (0.12 - 0.08) = \$22.25$$

$$\text{Value of the stock today} = (\$22.25 + \$0.9375) / 1.12 = \$20.70.$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #49 of 142

A company has 6% preferred stock outstanding with a par value of \$100. The required return on the preferred is 8%. What is the value of the preferred stock?

A) \$75.00.



B) \$100.00.



C) \$92.59.



#### Explanation




The annual dividend on the preferred is  $\$100(0.06) = \$6.00$ . The value of the preferred is  $\$6.00/0.08 = \$75.00$ .

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #50 of 142

Which of the following is a *disadvantage* of using the price-to-book value (PBV) ratio?

- A) Book values are affected by accounting standards, which may vary across firms and countries. 
- B) Book value may not mean much for manufacturing firms with significant fixed costs. 
- C) Firms with negative earnings cannot be evaluated with the PBV ratios. 

#### Explanation

The disadvantages of using PBV ratios are:




1. Book values are affected by accounting standards, which may vary across firms and countries.
2. Book value may not mean much for service firms without significant fixed costs.
3. Book value of equity can be made negative by a series of negative earnings, which limits the usefulness of the variable.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #51 of 142

The last dividend paid on a common stock was \$2.00, the growth rate is 5% and investors require a 10% return. Using the infinite period dividend discount model, calculate the value of the stock.

- A) \$42.00. 
- B) \$40.00. 
- C) \$13.33. 

#### Explanation




$$2(1.05) / (0.10 - 0.05) = \$42.00$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #52 of 142

Assuming the risk-free rate is 5% and the expected return on the market is 12%, what is the value of a stock with a beta of 1.5 that paid a \$2 dividend last year if dividends are expected to grow at a 5% rate forever?

- A) \$17.50. 
- B) \$12.50. 
- C) \$20.00. 

#### Explanation

$$P_0 = D_1 / (k - g)$$

$$R_s = R_f + \beta(R_M - R_f) = 0.05 + 1.5(0.12 - 0.05) = 0.155$$

$$D_1 = D_0(1 + g) = 2 \times (1.05) = 2.10$$

$$P_0 = 2.10 / (0.155 - 0.05) = \textbf{\$20.00}$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #53 of 142

Assuming a discount rate of 15%, a preferred stock with a perpetual dividend of \$10 is valued at approximately:

A) \$1.50.



B) \$66.67.



C) \$8.70.



#### Explanation

The formula for the value of preferred stock with a perpetual dividend is:  $D / k_p$ , or  $10.0 / 0.15 = \$66.67$ .

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #54 of 142

Holding all else equal, if the beta of a stock increases, the stock's price will:

A) increase.



B) decrease.



C) be unaffected.



#### Explanation

When the beta of a stock increases, its required return will increase. This increases the discount rate investors use to estimate the present value of the stock's future cash flows, which decreases the value of the stock.

(Study Session 15, Module 49.2, LOS 49.e)

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### Question #55 of 142

A company's payout ratio is 0.45 and its expected return on equity (ROE) is 23%. What is the company's implied growth rate in dividends?

A) 4.16%.



B) 10.35%.



C) 12.65%.



### Explanation

Growth Rate = (ROE)(1 – Payout Ratio) = (0.23)(0.55) = 12.65%

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #56 of 142

Use the following information to determine the value of River Gardens' common stock:

- Expected dividend payout ratio is 45%.
- Expected dividend growth rate is 6.5%.
- River Gardens' required return is 12.4%.
- Expected earnings per share next year are \$3.25.

A) \$30.12.



B) \$24.80.



C) \$27.25.



### Explanation

First, estimate the price to earnings (P/E) ratio as:  $(0.45) / (0.124 - 0.065) = 7.63$ . Then, multiply the expected earnings by the estimated P/E ratio:  $(\$3.25)(7.63) = \$24.80$ .

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #57 of 142

The XX Company paid a \$1 dividend in the most recent period. The company is expecting dividends to grow at a 6% rate into the future. What is the value of this stock if an investor requires a 15% rate of return on stocks of this risk class?

A) \$10.60.



B) \$11.78.



C) \$11.11.



### Explanation

Using the constant growth model,  $\$1(1.06) / (0.15 - 0.06) = \$11.78$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #58 of 142

A firm is expected to have four years of growth with a retention ratio of 100%. Afterwards the firm's dividends are expected to grow 4% annually, and the dividend payout ratio will be set at 50%. If earnings per share (EPS) = \$2.4 in year 5 and the required return on equity is 10%, what is the stock's value today?

A) \$20.00.



**B)** \$30.00.



**C)** \$13.66.



**Explanation**

Dividend in year 5 = (EPS)(payout ratio) =  $2.4 \times 0.5 = 1.2$

$P_4 = 1.2 / (0.1 - 0.04) = 1.2 / 0.06 = \$20$

$P_0 = PV(P_4) = \$20 / (1.10)^4 = \$13.66$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #59 of 142

If a firm's growth rate is 12% and its dividend payout ratio is 30%, its current return on equity (ROE) is *closest* to:

**A)** 40.00%.



**B)** 36.00%.



**C)** 17.14%.



**Explanation**

$g = (RR)(ROE)$

$g / RR = ROE$

$0.12 / (1 - 0.30) = 0.12 / 0.70 = 0.1714$  or 17.14%

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #60 of 142

Use the following data to analyze a stock's price earnings ratio (P/E ratio):

- The stock's beta is 1.2.
- The dividend payout ratio is 60%.
- The stock's expected growth rate is 7%.
- The risk free rate is 6% and the expected rate of return on the market is 13%.

Using the dividend discount model, the expected P/E ratio of the stock is *closest* to:

**A)** 5.4.



**B)** 10.0.



**C)** 8.1.



**Explanation**



$$k = ER = R_f + \text{Beta}(RM - R_f) = 0.06 + (1.2)(0.13 - 0.06) = 0.144$$

Dividend payout ratio = 0.60

$$P/E = \text{div payout} / (k - g) = 0.6 / (0.144 - 0.07) = 8.1$$

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #61 of 142

An analyst studying Albion Industries determines that the average EV/EBITDA ratio for Albion's industry is 10. The analyst obtains the following information from Albion's financial statements:

EBITDA = £11,000,000

Market value of debt = £30,000,000

Cash = £1,000,000

Based on the industry's average enterprise value multiple, what is the equity value of Albion Industries?

A) £110,000,000.



B) £80,000,000.



C) £81,000,000.



#### Explanation

Enterprise value = Average EV/EBITDA × company EBITDA = 10 × £11,000,000 = £110,000,000

Enterprise value = Equity value + debt – cash

Equity value = Enterprise value – debt + cash = £110,000,000 – £30,000,000 + £1,000,000 = £81,000,000

(Study Session 15, Module 49.3, LOS 49.k)

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### Question #62 of 142

Which type of cash dividend is *most likely* to be declared by a cyclical firm during good times?

A) Regular dividend.



B) Special dividend.



C) Stock dividend.



#### Explanation

Special dividends are used when favorable circumstances allow the firm to make a one-time cash payment to shareholders, in addition to any regular dividends the firm pays. Many cyclical firms (e.g., automakers) will use a special dividend to share profits with shareholders when times are good but maintain the flexibility to conserve cash when profits are down.

(Study Session 15, Module 49.1, LOS 49.c)

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### Question #63 of 142

Assume that the expected dividend growth rate ( $g$ ) for a firm decreased from 5% to zero. Further, assume that the firm's cost of equity ( $k$ ) and dividend payout ratio will maintain their historic levels. The firm's P/E ratio will *most likely*:

A) decrease.



B) become undefined.



C) increase.



#### Explanation

The P/E ratio may be defined as: Payout ratio / ( $k - g$ ), so if  $k$  is constant and  $g$  goes to zero, the P/E will decrease.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #64 of 142

All else equal, if a firm's return on equity (ROE) increases, the stock's value as estimated by the constant growth dividend discount model (DDM) will *most likely*:

A) increase.



B) not change.



C) decrease.



#### Explanation

*Increase in ROE:* ROE is a component of  $g$ . As  $g$  increases, the spread between  $k_e$  and  $g$ , or the P/E denominator, will decrease, and the P/E ratio will increase.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #65 of 142

Which of the following shows the dividend payment chronology in its proper sequence?

A) Ex-dividend date, holder-of-record date, declaration date, payment date.



B) Declaration date, ex-dividend date, holder-of-record date, payment date.



C) Declaration date, holder-of-record date, ex-dividend date, payment date.



#### Explanation

The dividend payment chronology begins with the declaration of a dividend by the board of directors. The ex-dividend date occurs one or two business days before the holder-of-record date.

(Study Session 15, Module 49.1, LOS 49.d)

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### Question #66 of 142

An analyst gathered the following data for the Parker Corp. for the year ended December 31, 2005:

- $EPS_{2005} = \$1.75$
- $Dividends_{2005} = \$1.40$
- $Beta_{Parker} = 1.17$
- Long-term bond rate = 6.75%
- Rate of return S&P 500 = 12.00%

The firm is expected to continue their dividend policy in future. If the long-term growth rate in earnings and dividends is expected to be 6%, the forward P/E ratio for Parker Corp. will be:

A) 21.54.



B) 12.31.



C) 11.61.



#### Explanation

The required rate of return on equity for Parker will be  $12.89\% = 6.75\% + 1.17(12.00\% - 6.75\%)$  and the firm pays 80% ( $1.40 / 1.75$ ) of its earnings as dividends.

Forward P/E ratio =  $0.80 / (0.1289 - 0.0600) = 11.61$

Where  $r$  = required rate of return on equity,  $g_n$  = growth rate in dividends (forever).

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #67 of 142

Use the following information on Brown Partners, Inc. to compute the current stock price.

- Dividend just paid = \$6.10
- Expected dividend growth rate = 4%
- Expected stock price in one year = \$60
- Risk-free rate = 3%
- Risk premium on the stock = 12%

A) \$59.55.



B) \$57.70.



C) \$57.48.



#### Explanation

The current stock price is equal to  $(D_1 + P_1) / (1 + k_e)$ .  $D_1$  equals  $\$6.10(1.04) = \$6.34$ . The equity discount rate is  $3\% + 12\% = 15\%$ . Therefore the current stock price is  $(\$6.34 + \$60)/(1.15) = \$57.70$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #68 of 142

If a company can convince its suppliers to offer better terms on their products leading to a higher profit margin, the return on equity (ROE) will *most likely*:

A) increase and the stock price will increase



B) decrease and the stock price will increase.



C) increase and the stock price will decline.



#### Explanation

Better supplier terms lead to increased profitability. Better profit margins lead to an increase in ROE. This leads to an increase in the dividend growth rate. The difference between the cost of equity and the dividend growth rate will decline, causing the stock price to increase.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #69 of 142

Given the following estimated financial results for the next period, value the stock of FishnChips, Inc., using the infinite period dividend discount model (DDM).

- Sales of \$1,000,000.
- Earnings of \$150,000.
- Total assets of \$800,000.
- Equity of \$400,000.
- Dividend payout ratio of 60.0%.
- Average shares outstanding of 75,000.
- Real risk free interest rate of 4.0%.
- Expected inflation rate of 3.0%.
- Expected market return of 13.0%.
- Stock Beta at 2.1.

The per share value of FishnChips stock is approximately: *(Note: Carry calculations out to at least 3 decimal places.)*

A) \$30.89.



B) \$26.86.



C) \$17.91.



#### Explanation

Here, we are given all the inputs we need. Use the following steps to calculate the value of the stock:

First, expand the infinite period DDM:

DDM formula:  $P_0 = D_1 / (k_e - g)$

$D_1 = (\text{Earnings} \times \text{Payout ratio}) / \text{average number of shares outstanding}$

$$= (\$150,000 \times 0.60) / 75,000 = \$1.20$$

$k_e = \text{nominal risk free rate} + [\text{beta} \times (\text{expected market return} - \text{nominal risk free rate})]$

Note: Nominal risk-free rate  $= (1 + \text{real risk free rate}) \times (1 + \text{expected inflation}) - 1$

$$= (1.04) \times (1.03) - 1 = 0.0712, \text{ or } 7.12\%.$$

$$k_e = 7.12\% + [2.1 \times (13.0\% - 7.12\%)] = 0.19468$$

$g = (\text{retention rate} \times \text{ROE})$

$$\text{Retention} = (1 - \text{Payout}) = 1 - 0.60 = 0.40.$$

ROE  $= (\text{net income} / \text{sales})(\text{sales} / \text{total assets})(\text{total assets} / \text{equity})$

$$= (150,000 / 1,000,000)(1,000,000 / 800,000)(800,000 / 400,000)$$

$$= 0.375$$

$$g = 0.375 \times 0.40 = 0.15$$

Then, calculate:  $P_0 = D_1 / (k_e - g) = \$1.20 / (0.19468 - 0.15) = \mathbf{26.86}.$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #70 of 142

According to the earnings multiplier model, all else equal, as the required rate of return on a stock increases, the:

A) P/E ratio will decrease.



B) earnings per share will increase.



C) P/E ratio will increase.



#### Explanation

According to the earnings multiplier model, the P/E ratio is equal to  $P_0/E_1 = (D_1/E_1)/(k_e - g)$ . As  $k_e$  increases,  $P_0/E_1$  will decrease, all else equal.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #71 of 142

The current price of XYZ, Inc., is \$40 per share with 1,000 shares of equity outstanding. Sales are \$4,000 and the book value of the firm is \$10,000. What is the price/sales ratio of XYZ, Inc.?

A) 10.000.



B) 0.010.



C) 4.000.



#### Explanation

The price/sales ratio is  $(\text{price per share})/(\text{sales per share}) = (40)/(4,000/1,000) = 10.0$ . Alternatively, the price/sales ratio may be thought of as the market value of the company divided by its sales, or  $(40 \times 1,000)/4,000$ , or 10.0 again.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #72 of 142

Shareholders selling shares between the ex-dividend date and holder-of-record date:

A) do not receive the dividend, which is paid to the share buyer.



B) receive the dividend.



C) do not receive the dividend, which stays with the company.



#### Explanation

The holder-of-record date is the date on which the shareholders of record are designated to receive the dividend. Shares sold on or after the ex-dividend date are sold without claim to the dividend, even if they are sold prior to the date of record. The dividend would be paid to the holder as of the close of trading on the day prior to the ex-dividend date.

(Study Session 15, Module 49.1, LOS 49.d)

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### Question #73 of 142

According to the earnings multiplier model, a stock's P/E ratio ( $P_0/E_1$ ) is affected by all of the following EXCEPT the:

A) expected stock price in one year.



B) expected dividend payout ratio.



C) required return on equity.



#### Explanation

According to the earnings multiplier model, the P/E ratio is equal to  $P_0/E_1 = (D_1/E_1)/(k_e - g)$ .

Thus, the P/E ratio is determined by:




- The expected dividend payout ratio ( $D_1/E_1$ ).
- The required rate of return on the stock ( $k_e$ ).
- The expected growth rate of dividends ( $g$ ).

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #74 of 142

Utilizing the infinite period dividend discount model, all else held equal, if the required rate of return ( $K_e$ ) decreases, the model yields a price that is:

- A) increased, due to a smaller spread between required return and growth. 
- B) reduced, due to increased spread between growth and required return. 
- C) reduced, due to the reduction in discount rate. 

#### Explanation




The denominator of the single-stage DDM is the spread between required return  $K_e$ , and expected growth rate,  $g$ . The smaller the denominator, all else held equal, the larger the computed value.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #75 of 142

Next year's dividend is expected to be \$2,  $g = 7\%$ , and  $k = 12\%$ . What is the stock's intrinsic value?

- A) \$42.80. 
- B) \$40.00. 
- C) \$28.57. 

#### Explanation




Using the constant growth model,  $\$2 / (0.12 - 0.07) = \$40.00$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #76 of 142

An argument against using the price-to-earnings (P/E) valuation approach is that:

- A) earnings can be negative. 
- B) earnings power is the primary determinant of investment value. 
- C) research shows that P/E differences are significantly related to long-run average stock returns. 

#### Explanation

Negative earnings render the P/E ratio useless. Both remaining factors increase the usefulness of the P/E approach.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #77 of 142

All of the following factors affects the firm's P/E ratio EXCEPT:

A) the expected interest rate on the bonds of the firm.



B) growth rates of dividends.



C) the required rate of return.



**Explanation**

The factors that affect the P/E ratio are the same factors that affect the value of a firm in the infinite growth dividend discount model. The expected interest rate on the bonds is not a significant factor affecting the P/E ratio.

(Study Session 15, Module 49.3, LOS 49.j)

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**Question #78 of 142**

REM Corp.'s return on equity (ROE) is 19.5% and its dividend payout rate is 45%. What is the company's implied dividend growth rate?

A) 8.78%.



B) 19.5%.



C) 10.73%.



**Explanation**

$$g = (\text{ROE})(\text{RR})$$

$$g = (19.5)(1 - 0.45)$$

$$g = (0.195)(0.55)$$

$$= 0.1073 \text{ or } 10.73\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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**Question #79 of 142**

A company with a return on equity (ROE) of 27%, required return on equity ( $k_e$ ) of 20%, and a dividend payout ratio of 40% has an implied sustainable growth rate *closest* to:

A) 12.00%.



B) 10.80%.



C) 16.20%.



**Explanation**

$$g = (\text{RR})(\text{ROE})$$

$$= (.60)(.27)$$

$$= 0.162 \text{ or } 16.2\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #80 of 142

One advantage to using the price/book value (P/B) ratio over using the price/earnings (P/E) ratio is that P/B can be used when:

- A) the firm is in a slow growth phase.
- B) earnings or cash flows are negative.
- C) stock markets are volatile.



#### Explanation

When earnings are negative, P/E ratios cannot be used but P/B ratios can be used. The firm's rate of growth and the volatility of markets do not suggest advantages of using P/B ratios rather than P/E ratios.

(Study Session 15, Module 49.3, LOS 49.m)

### Question #81 of 142

Given the following information, compute the price/cash flow ratio for EAV Technology, a U.S. GAAP reporting firm.

- Net income per share = \$6
- Price per share = \$100
- Depreciation per share = \$2
- Interest expense per share = \$4
- Marginal tax rate = 25%

- A) 9.1X.
- B) 12.5X.
- C) 8.3X.



#### Explanation

Operating cash flow = Net income per share + Depreciation per share = \$6 + \$2 = \$8

Price/cash flow = \$100 / \$8.0X = 12.5X

(Study Session 15, Module 49.3, LOS 49.j)

### Question #82 of 142

An analyst gathered the following information about an industry. The industry beta is 0.9. The industry profit margin is 8%, the total asset turnover ratio is 1.5, and the leverage multiplier is 2. The dividend payout ratio of the industry is 50%. The risk-free rate is 7% and the expected market return is 15%. The industry P/E is *closest* to:

- A) 22.73.
- B) 12.00.
- C) 14.20.



### Explanation

Using the CAPM:  $k_i = 7\% + 0.9(0.15 - 0.07) = 14.2\%$ .

Using the DuPont equation:  $ROE = 8\% \times 1.5 \times 2 = 24\%$ .

$g = \text{retention ratio} \times ROE = 0.50 \times 24\% = 12\%$ .

$P/E = 0.5 / (0.142 - 0.12) = 22.73$ .

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #83 of 142

Other things equal, the effect of a stock split on shareholder wealth is to:

A) increase it.



B) leave it unchanged.



C) decrease it.



### Explanation

Stock splits divide each existing share into multiple shares. The price of each share will drop correspondingly to the number of shares created, so there is no change in the owner's wealth.

(Study Session 15, Module 49.1, LOS 49.c)

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### Question #84 of 142

An equity valuation model that values a firm based on the market value of its outstanding debt and equity securities, relative to a firm fundamental, is a(n):

A) enterprise value model.



B) asset-based model.



C) market multiple model.



### Explanation

An enterprise value model relates a firm's enterprise value (the market value of its outstanding equity and debt securities minus its cash and marketable securities holdings) to its EBITDA, operating earnings, or revenue.

(Study Session 15, Module 49.1, LOS 49.b)

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### Question #85 of 142

When calculating a sustainable growth rate for a company an analyst *most likely* assumes:

A) the dividend payout ratio is constant.



B) equity is sold at a constant rate.



C) return on equity will grow.



### Explanation

The sustainable growth rate is the rate at which equity, earnings, and dividends can continue to grow indefinitely assuming that ROE is constant, the dividend payout ratio is constant, and no new equity is sold.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #86 of 142

A high growth rate would be consistent with:

A) a high dividend payout rate.



B) a low retention rate.



C) a high ROE.



### Explanation

Since  $g = \text{retention rate} \times \text{ROE}$ , or  $(1 - \text{payout ratio}) \times \text{ROE}$ , the only choice that would result in a higher  $g$  is a higher ROE. A low ROE, or a high dividend payout rate (which is the same as a low retention rate) would result in a *low* growth rate.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #87 of 142

Which of the following is NOT an assumption of the constant growth dividend discount model (DDM)?

A) ROE is constant.



B) Dividend payout is constant.



C) The growth rate of the firm is higher than the overall growth rate of the economy.



### Explanation

Other assumptions of the DDM are: dividends grow at a constant rate and the growth rate continues for an infinite period.

(Study Session 15, Module 49.2, LOS 49.h)

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### Question #88 of 142

If the return on equity for a firm is 15% and the retention rate is 40%, the firm's sustainable growth rate is *closest* to:

A) 9%.



B) 15%.



C) 6%.



### Explanation

$$g = (RR)(ROE)$$

$$= (0.15)(0.40)$$

$$= 0.06 \text{ or } 6\%$$

(Study Session 15, Module 49.2, LOS 49.g)

## Question #89 of 142

Which of the following statements concerning security valuation is *least* accurate?

- A) A stock with an expected dividend payout ratio of 30%, a required return of 8%, an expected dividend growth rate of 4%, and expected earnings of \$4.15 per share is estimated to be worth ✗
- B) A stock with a dividend last year of \$3.25 per share, an expected dividend growth rate of 3.5%, and a required return of 12.5% is estimated to be worth \$36.11. ✓
- C) A stock to be held for two years with a year-end dividend of \$2.20 per share, an estimated value of \$20.00 at the end of two years, and a required return of 15% is estimated to be worth \$18.70 ✗

### Explanation

A stock with a dividend last year of \$3.25 per share, an expected dividend growth rate of 3.5%, and a required return of 12.5% is estimated to be worth \$37.33 using the DDM where  $P_0 = D_1 / (k - g)$ . We are given  $D_0 = \$3.25$ ,  $g = 3.5\%$ , and  $k = 12.5\%$ . What we need to find is  $D_1$  which equals  $D_0 \times (1 + g)$  therefore  $D_1 = \$3.25 \times 1.035 = \$3.36$  thus  $P_0 = 3.36 / (0.125 - 0.035) = \$37.33$ .

In the answer choice where the stock value is \$18.70, discounting the future cash flows back to the present gives the present value of the stock. the future cash flows are the dividend in year 1 plus the dividend and value of the stock in year 2 thus the equation becomes:  $V_0 = 2.2 / 1.15 + (2.2 + 20) / 1.15^2 = \$18.70$

For the answer choice where the stock value is \$31.13 use the DDM which is  $P_0 = D_1 / (k - g)$ . We are given  $k = 0.08$ ,  $g = 0.04$ , and what we need to find is next year's dividend or  $D_1$ .  $D_1 = \text{Expected earnings} \times \text{payout ratio} = \$4.15 \times 0.3 = \$1.245$  thus  $P_0 = \$1.245 / (0.08 - 0.04) = \$31.13$

(Study Session 15, Module 49.2, LOS 49.g)

## Question #90 of 142

Enterprise value is *most* accurately described as a firm's:

- A) market value of stock plus market value of debt, minus cash and short-term investments. ✓
- B) market value of assets minus market value of liabilities, plus cash and short-term investments. ✗
- C) market value of stock plus cash and short-term investments, minus market value of debt. ✗

### Explanation

Enterprise value = market value of common and preferred stock + market value of debt – cash and short-term investments.

(Study Session 15, Module 49.3, LOS 49.k)

### Question #91 of 142

A valuation model based on the cash flows that a firm will have available to pay dividends in the future is *best* characterized as a(n):

- A) infinite period dividend discount model.
- B) free cash flow to equity model.
- C) free cash flow to the firm model.



#### Explanation

Free cash flow to equity represents a firm's capacity to pay future dividends. A free cash flow to equity model estimates the firm's FCFE for future periods and values the stock as the present value of the firm's future FCFE per share.

(Study Session 15, Module 49.2, LOS 49.e)

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### Question #92 of 142

The free cash flow to equity model is *best* described as a(n):

- A) single-factor model.
- B) enterprise value model.
- C) present value model.



#### Explanation

The free cash flow to equity model is one type of present value model or discounted cash flow model. It estimates a stock's value as the present value of cash available to common shareholders. The enterprise value model is an example of a multiplier model.

(Study Session 15, Module 49.1, LOS 49.b)

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### Question #93 of 142

Baker Computer earned \$6.00 per share last year, has a retention ratio of 55%, and a return on equity (ROE) of 20%. Assuming their required rate of return is 15%, how much would an investor pay for Baker on the basis of the earnings multiplier model?

- A) \$173.90.
- B) \$40.00.
- C) \$74.93.



#### Explanation

$$g = \text{Retention} \times \text{ROE} = (0.55) \times (0.2) = 0.11$$

$$P_0/E_1 = 0.45 / (0.15 - 0.11) = 11.25$$

$$\text{Next year's earnings } E_1 = E_0 \times (1 + g) = (6.00) \times (1.11) = \$6.66$$

$$P_0 = 11.25(\$6.66) = \$74.93$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #94 of 142

If a company has a "0" earnings retention rate, the firm's P/E ratio will equal:

A)  $D/P + g$



B)  $k + g$



C)  $1 / k$



#### Explanation

$$P/E = \text{div payout ratio} / (k - g)$$

$$\text{where } g = (\text{retention rate})(\text{ROE}) = (0)(\text{ROE}) = 0$$

$$\text{Dividend payout} = 1 - \text{retention ratio} = 1 - 0 = 1$$

$$P/E = 1 / (k - 0) = 1 / k$$

(Study Session 15, Module 49.3, LOS 49.j)

### Question #95 of 142

A firm has a return on equity (ROE) of 15% and a dividend payout rate of 80%. If last year's dividend was \$0.80 and the required return on equity is 10%, what is the firm's estimated dividend growth rate and what is the current stock price?

<u>Dividend growth</u> <u>rate</u>	<u>Stock price</u>
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A) 3.00%                      \$9.96



B) 12.00%                    \$11.77



C) 3.00%                      \$11.77



#### Explanation

The expected growth rate of dividends is the retention rate (RR) times the return on the equity portion of new investments (ROE),  $g = (RR)(\text{ROE})$ . The retention rate is 1 minus the payout rate.  $RR = (1 - 0.80) = 0.20$ .  $g = (0.20)(0.15) = 3.00\%$ .

The value of the stock will be the dividend paid next year divided by the required rate of return minus the growth rate. Next year's dividend is  $\$0.80 \times 1.03 = \$0.824$ . So the value is  $0.824 / (.10 - 0.03) = 0.824 / 0.07 = \$11.77$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #96 of 142

An analyst estimates that a stock's value is €22.50. If the market price of this stock is €25.00 the analyst believes the stock is:

- A) fairly valued.
- B) undervalued.
- C) overvalued.



#### Explanation

If a stock's intrinsic value is less than its market value, the stock is overvalued.

(Study Session 15, Module 49.1, LOS 49.a)

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### Question #97 of 142

An investor is considering acquiring a common stock that he would like to hold for one year. He expects to receive both \$1.50 in dividends and \$26 from the sale of the stock at the end of the year. What is the maximum price he should pay for the stock today to earn a 15 percent return?

- A) \$27.30.
- B) \$23.91.
- C) \$24.11.



#### Explanation

By discounting the cash flows for one period at the required return of 15% we get:  $x = (26 + 1.50) / (1 + 0.15)^1$

$$(x)(1.15) = 26 + 1.50$$

$$x = 27.50 / 1.15$$

$$x = \$23.91$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #98 of 142

Which of the following statements about the constant growth dividend discount model (DDM) in its application to investment analysis is *least* accurate? The model:

- A) is best applied to young, rapidly growing firms.
- B) can't be applied when  $g > K$ .
- C) is inappropriate for firms with variable dividend growth.



#### Explanation

The model is most appropriately used when the firm is mature, with a moderate growth rate, paying a constant stream of dividends. In order for the model to produce a finite result, the company's growth rate must not exceed the required rate of return.

(Study Session 15, Module 49.2, LOS 49.h)

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### Question #99 of 142

Use the following information and the multi-period dividend discount model to find the value of Computech's common stock.

- Last year's dividend was \$1.62.
- The dividend is expected to grow at 12% for three years.
- The growth rate of dividends after three years is expected to stabilize at 4%.
- The required return for Computech's common stock is 15%.

Which of the following statements about Computech's stock is *least* accurate?

**A)** Computech's stock is currently worth \$17.46.



**B)** The dividend at the end of year three is expected to be \$2.27.



**C)** At the end of two years, Computech's stock will sell for \$20.64.



#### Explanation

The dividends for years 1, 2, and 3 are expected to be  $(\$1.62)(1.12) = \$1.81$ ;  $(\$1.81)(1.12) = \$2.03$ ; and  $(\$2.03)(1.12) = \$2.27$ . At the end of year 2, the stock should sell for  $\$2.27 / (0.15 - 0.04) = \$20.64$ . The stock should sell currently for  $(\$20.64 + \$2.03) / (1.15)^2 + (\$1.81) / (1.15) = \$18.71$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #100 of 142

A company last paid a \$1.00 dividend, the current market price of the stock is \$20 per share and the dividends are expected to grow at 5 percent forever. What is the required rate of return on the stock?

**A)** 9.78%.



**B)** 10.00%.



**C)** 10.25%.



#### Explanation

$$D_0 (1 + g) / P_0 + g = k$$

$$1.00 (1.05) / 20 + 0.05 = 10.25\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #101 of 142



The purchaser of a stock will receive the next dividend if the order is filled before the:

- A) holder-of-record date.
- B) payment date.
- C) ex-dividend date.



**Explanation**

The ex-dividend date is the cutoff date for receiving the dividend and occurs one or two business days before the holder-of-record date. An investor who buys a share on or after the ex-dividend date will not receive the dividend.

(Study Session 15, Module 49.1, LOS 49.d)

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### Question #102 of 142

All else equal, an increase in a company's growth rate will most likely cause its P/E ratio to:

- A) decrease.
- B) increase.
- C) either increase or decrease.



**Explanation**

*Increase in g:* As  $g$  increases, the spread between  $k_e$  and  $g$ , or the P/E denominator, will decrease, and the P/E ratio will increase.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #103 of 142

Given the following information, compute price/book value.

- Book value of assets = \$550,000
- Total sales = \$200,000
- Net income = \$20,000
- Dividend payout ratio = 30%
- Operating cash flow = \$40,000
- Price per share = \$100
- Shares outstanding = 1000
- Book value of liabilities = \$500,000

- A) 2.0X.
- B) 5.5X.
- C) 2.5X.



**Explanation**

Book value of equity = \$550,000 - \$500,000 = \$50,000

Market value of equity = (\$100)(1000) = \$100,000

Price/Book = \$100,000/\$50,000 = 2.0X

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #104 of 142

The following data pertains to a common stock:

- It will pay no dividends for two years.
- The dividend three years from now is expected to be \$1.
- Dividends are expected to grow at a 7% rate from that point onward.

If an investor requires a 17% return on this stock, what will they be willing to pay for this stock now?

A) \$ 6.24.



B) \$ 7.30.



C) \$10.00.



#### Explanation

time line = \$0 now; \$0 in yr 1; \$0 in yr 2; \$1 in yr 3.

$$P_2 = D_3 / (k - g) = 1 / (.17 - .07) = \$10$$

Note the math. The price is always one year before the dividend date.

Solve for the PV of \$10 to be received in two years.

$$FV = 10; n = 2; i = 17; \text{compute PV} = \$7.30$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #105 of 142

Given the following information, compute the implied dividend growth rate.

- Profit margin = 10.0%
- Total asset turnover = 2.0 times
- Financial leverage = 1.5 times
- Dividend payout ratio = 40.0%

A) 4.5%.



B) 12.0%.



C) 18.0%.



#### Explanation

Retention ratio equals  $1 - 0.40$ , or  $0.60$ .

Return on equity equals  $(10.0\%)(2.0)(1.5) = 30.0\%$ .

Dividend growth rate equals  $(0.60)(30.0\%) = 18.0\%$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #106 of 142

Gwangwa Gold, a South African gold producer, has as its primary asset a mine which is shown on the balance sheet with a value of R100 million. An analyst estimates the market value of this mine to be 90% of book value. The company's balance sheet shows other assets of R20 million and liabilities of R40 million, and the analyst feels that the book value of these items reflects their market values. Using the asset-based valuation approach, what should the analyst estimate the value of the company to be?

A) R80 million.



B) R110 million.



C) R70 million.



#### Explanation

Market value of assets =  $0.9(\text{R}100 \text{ million}) + \text{R}20 \text{ million} = \text{R}110 \text{ million}$

Market value of liabilities = R40 million

Estimated net value of company =  $\text{R}110 \text{ million} - \text{R}40 \text{ million} = \text{R}70 \text{ million}$ .

(Study Session 15, Module 49.3, LOS 49.I)

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### Question #107 of 142

The yield on a company's 7.5%, \$50 par preferred stock is 6%. The value of the preferred stock is *closest* to:

A) \$50.00.



B) \$62.50.



C) \$12.50.



#### Explanation

The preferred dividend is  $0.075(\$50) = \$3.75$ . The value of the preferred =  $\$3.75 / 0.06 = \$62.50$ .

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #108 of 142

An analyst has gathered the following data for Webco, Inc:

- Retention = 40%
- ROE = 25%
- $k = 14\%$

Using the infinite period, or constant growth, dividend discount model, calculate the price of Webco's stock assuming that next years earnings will be \$4.25.

**A)** \$63.75.



**B)** \$125.00.



**C)** \$55.00.



**Explanation**

$$g = (\text{ROE})(\text{RR}) = (0.25)(0.4) = 10\%$$

$$V = D_1 / (k - g)$$

$$D_1 = 4.25 (1 - 0.4) = 2.55$$

$$G = 0.10$$

$$K - g = 0.14 - 0.10 = 0.04$$

$$V = 2.55 / 0.04 = \mathbf{63.75}$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #109 of 142

An analyst evaluating a stable, mature, electric utility with non-cyclical earnings and a high dividend would *most appropriately* use a:

**A)** 2-stage model.



**B)** constant growth model.



**C)** 3-stage model



**Explanation**

A constant growth model is most appropriate for mature firms in stable markets that pay dividends which grow at a constant rate.

(Study Session 15, Module 49.2, LOS 49.h)

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### Question #110 of 142

What value would be placed on a stock that currently pays no dividend but is expected to start paying a \$1 dividend five years from now? Once the stock starts paying dividends, the dividend is expected to grow at a 5 percent annual rate. The appropriate discount rate is 12 percent.

**A)** \$8.11.



**B)** \$9.08.



C) \$14.29.



**Explanation**

$$P_4 = D_5 / (k - g) = 1 / (.12 - .05) = 14.29$$

$$P_0 = [FV = 14.29; n = 4; i = 12] = \$9.08.$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #111 of 142

If a stock sells for \$50 that has an expected annual dividend of \$2 and has a sustainable growth rate of 5%, what is the market discount rate for this stock?

A) 10.0%.



B) 7.5%.



C) 9.0%.



**Explanation**

$$k = [(D_1 / P) + g] = [(2/50) + 0.05] = 0.09, \text{ or } 9.00\%.$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #112 of 142

All else equal, if there is an increase in the required rate of return, a stock's value as estimated by the constant growth dividend discount model (DDM) will:

A) increase.



B) increase or decrease, depending upon the relationship between  $k_e$  and ROE.



C) decrease.



**Explanation**

If  $k_e$  increases, the spread between  $k_e$  and  $g$  widens (increasing the denominator), resulting in a lower valuation.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #113 of 142

If a preferred stock that pays a \$11.50 dividend is trading at \$88.46, what is the market's required rate of return for this security?

A) 11.76%.



B) 7.69%.



C) 13.00%.



### Explanation

From the formula:  $\text{Value}_{\text{Preferred Stock}} = D / k_p$ , we derive  $k_p = D / \text{Value}_{\text{Preferred Stock}} = 11.50 / 88.46 = 0.1300$ , or 13.00%.

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #114 of 142

A firm has an expected dividend payout ratio of 50%, a required rate of return of 12% and a constant growth rate of 6%. If earnings for the next year are expected to be \$4.50, the value of the stock today is *closest to*:

A) \$37.50.



B) \$39.75.



C) \$33.50.



### Explanation

Expected dividend =  $\$4.50 \times 0.50 = \$2.25$

Value today =  $\$2.25 / (0.12 - 0.06) = \$37.50$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #115 of 142

An enterprise value multiple is typically calculated as the ratio of enterprise value to:

A) net income.



B) EBITDA.



C) sales.



### Explanation

An enterprise value multiple is typically calculated as the ratio of enterprise value to EBITDA or some other measure of operating income. Net income is not typically used because it reflects a firm's current capital structure and non-cash charges, and because the ratio becomes meaningless when net income is negative.

(Study Session 15, Module 49.3, LOS 49.k)

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### Question #116 of 142

Which valuation method is *most appropriate* to estimate a floor value for a firm being liquidated?

A) Asset-based.



B) Price/earnings ratio.



C) Discounted cash flow.



### Explanation




An asset-based model would likely be most appropriate to estimate a floor value for a firm entering liquidation. Prior or future years' earnings and cash flow are not relevant measures for a firm that is not a going concern.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #117 of 142

An argument against using the price to cash flow (P/CF) valuation approach is that:

- A) cash flows are not as easy to manipulate or distort as EPS and book value. 
- B) price to cash flow ratios are not as volatile as price-to-earnings (P/E) multiples. 
- C) non-cash revenue and net changes in working capital are ignored when using earnings per share (EPS) plus non-cash charges as an estimate. 

#### Explanation




Items affecting actual cash flow from operations are ignored when the EPS plus non-cash charges estimate is used. For example, non-cash revenue and net changes in working capital are ignored. Both remaining responses are arguments in favor of using the price to cash flow approach.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #118 of 142

According to the earnings multiplier model, which of the following factors is the least important in estimating a stock's price-to-earnings ratio? The:

- A) historical dividend payout ratio. 
- B) estimated required rate of return on the stock. 
- C) expected dividend payout ratio. 

#### Explanation

$$P/E = (D_1/E_1)/(k - g)$$

where:

$D_1/E_1$  = the expected dividend payout ratio

$k$  = estimated required rate of return on the stock

$g$  = expected growth rate of dividends for the stock

The P/E is *most* sensitive to movements in the denominator.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #119 of 142

The Sustainable Growth Rate is equal to:

A)  $(ROE) \times (1+RR)$ .



B)  $(ROE) \times (1-RR)$ .



C)  $(ROE) \times (RR)$ .



#### Explanation

The Sustainable Growth Rate is equal to the return on the equity portion of new investments (ROE) multiplied by the firm's retention rate (RR).

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #120 of 142

A firm has an expected dividend payout ratio of 50 percent, a required rate of return of 18 percent, and an expected dividend growth rate of 3 percent. The firm's price to earnings ratio (P/E) is:

A) 3.33.



B) 6.66.



C) 2.78.



#### Explanation

$P/E = .5 / (18\% - 3\%) = 3.33$ .

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #121 of 142

An analyst projects the following pro forma financial results for Magic Holdings, Inc., in the next year:

- Sales of \$1,000,000
- Earnings of \$200,000
- Total assets of \$750,000
- Equity of \$500,000
- Dividend payout ratio of 62.5%
- Shares outstanding of 50,000
- Risk free interest rate of 7.5%
- Expected market return of 13.0%
- Stock Beta at 1.8

If the analyst assumes Magic Holdings, Inc. will produce a constant rate of dividend growth, the value of the stock is *closest to*:

A) \$44.



B) \$104.



C) \$19.



#### Explanation



Infinite period DDM:  $P_0 = D_1 / (k_e - g)$

$$D_1 = (\text{Earnings} \times \text{Payout ratio}) / \text{average number of shares outstanding} \\ = (\$200,000 \times 0.625) / 50,000 = \$2.50.$$

$$k_e = \text{risk free rate} + [\text{beta} \times (\text{expected market return} - \text{risk free rate})]$$

$$k_e = 7.5\% + [1.8 \times (13.0\% - 7.5\%)] = 17.4\%.$$

$$g = (\text{retention rate} \times \text{ROE})$$

$$\text{Retention} = (1 - \text{Payout}) = 1 - 0.625 = 0.375.$$

$$\text{ROE} = \text{net income/equity}$$

$$= 200,000/500,000 = 0.4$$

$$g = 0.375 \times 0.4 = 0.15.$$

$$P_0 = D_1 / (k_e - g) = \$2.50 / (0.174 - 0.15) = 104.17.$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #122 of 142

The required rate of return on equity used as an input to the dividend discount model is influenced by each of the following factors EXCEPT:

A) the stock's dividend payout ratio.



B) the stock's appropriate risk premium.



C) the expected inflation rate.



#### Explanation

A stock's required rate of return is equal to the nominal risk-free rate plus a risk premium. The nominal risk-free rate is approximately equal the real risk-free rate plus expected inflation.

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #123 of 142

An enterprise value model for equity valuation is *most accurately* described as a(n):

A) asset-based model.



B) multiplier model.



C) discounted cash flow model.



#### Explanation

An enterprise value model is an example of a multiplier model. Enterprise value is analyzed as a multiple of revenue or earnings and compared among firms in a peer group.

(Study Session 15, Module 49.1, LOS 49.b)

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### Question #124 of 142

Assuming all other factors remain unchanged, which of the following would *most likely* lead to a decrease in the market P/E ratio?

A) A rise in the stock risk premium.



B) An increase in the dividend payout ratio.



C) A decline in the risk-free rate.



#### Explanation

$$P/E = (1 - RR)/(k - g)$$

To lower P/E: RR increases, g decreases and or k increases. Both a decline in the RF rate and a decline in the rate of inflation will reduce k. An increase in the stock's risk premium will increase k.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #125 of 142

Which of the following is a disadvantage of using price-to-sales (P/S) multiples in stock valuations?

A) The use of P/S multiples can miss problems associated with cost control.



B) It is difficult to capture the effects of changes in pricing policies using P/S ratios.



C) P/S multiples are more volatile than price-to-earnings (P/E) multiples.



#### Explanation

Due to the stability of using sales relative to earnings in the P/S multiple, an analyst may miss problems of troubled firms concerning its cost control. P/S multiples are actually less volatile than P/E ratios, which is an advantage in using the P/S multiple. Also, P/S ratios provide a useful framework for evaluating effects of pricing changes on firm value.

(Study Session 15, Module 49.3, LOS 49.i)

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### Question #126 of 142

What is the value of a stock that paid a \$0.25 dividend last year, if dividends are expected to grow at a rate of 6% forever? Assume that the risk-free rate is 5%, the expected return on the market is 10%, and the stock's beta is 0.5.

A) \$3.53.



B) \$16.67.



C) \$17.67.



#### Explanation

The discount rate is  $k_e = 0.05 + 0.5(0.10 - 0.05) = 0.075$ . Use the infinite period dividend discount model to value the stock. The stock value =  $D_1 / (k_e - g) = (0.25 \times 1.06) / (0.075 - 0.06) = \$17.67$ .

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #127 of 142

A firm has a profit margin of 10%, an asset turnover of 1.2, an equity multiplier of 1.3, and an earnings retention ratio of 0.5. What is the firm's internal growth rate?

A) 4.5%.



B) 7.8%.



C) 6.7%.



#### Explanation

$ROE = (\text{Net Income} / \text{Sales})(\text{Sales} / \text{Total Assets})(\text{Total Assets} / \text{Total Equity})$

$ROE = (0.1)(1.2)(1.3) = 0.156$

$g = (\text{retention ratio})(ROE) = 0.5(0.156) = 0.078 \text{ or } 7.8\%$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #128 of 142

All else equal, the price-to-earnings (P/E) ratio of a stable firm will increase if the:

A) long-term growth rate is decreased.



B) ROE is increased.



C) dividend payout is decreased.



#### Explanation

The increase in growth rate will increase the P/E ratio of a stable firm and growth rate can be calculated by the formula  $g = ROE \times \text{retention ratio}$ . All else being equal an increase in ROE will therefore increase the P/E ratio. Note that decreasing the dividend payout ratio and decreasing the long term growth rate will both serve to decrease the P/E ratio.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #129 of 142

In its latest annual report, a company reported the following:

Net income = \$1,000,000

Total equity = \$5,000,000

Total assets = \$10,000,000

Dividend payout ratio = 40%

Based on the sustainable growth model, the *most likely* forecast of the company's future earnings growth rate is:

A) 6%.



B) 12%.



C) 8%.



#### Explanation

$$g = (RR)(ROE)$$

$$RR = 1 - \text{dividend payout ratio} = 1 - 0.4 = 0.6$$

$$ROE = NI / \text{Total Equity} = 1,000,000 / 5,000,000 = 1 / 5 = 0.2$$

*Note:* This is the "simple" calculation of ROE. Since we are only given these inputs, these are what you should use. Also, if given beginning and ending equity balances, use the average in the denominator.

$$g = (0.6)(0.2) = 0.12 \text{ or } 12\%$$

(Study Session 15, Module 49.2, LOS 49.g)

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### Question #130 of 142

A stock has a required rate of return of 15%, a constant growth rate of 10%, and a dividend payout ratio of 45%. The stock's price-earnings ratio should be:

A) 4.5 times.



B) 9.0 times.



C) 3.0 times.



#### Explanation

$$P/E = D/E_1 / (k - g)$$

$$D/E_1 = \text{Dividend Payout Ratio} = 0.45$$

$$k = 0.15$$

$$g = 0.10$$

$$P/E = 0.45 / (0.15 - 0.10)$$

$$= 0.45 / 0.05 = 9$$

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #131 of 142

Using the one-year holding period and multiple-year holding period dividend discount model (DDM), calculate the change in value of the stock of Monster Burger Place under the following scenarios. First, assume that an investor holds the stock for only one year. Second, assume that the investor intends to hold the stock for two years. Information on the stock is as follows:

- Last year's dividend was \$2.50 per share.
- Dividends are projected to grow at a rate of 10.0% for each of the next two years.
- Estimated stock price at the end of year 1 is \$25 and at the end of year 2 is \$30.
- Nominal risk-free rate is 4.5%.
- The required market return is 10.0%.
- Beta is estimated at 1.0.

The value of the stock if held for one year and the value if held for two years are:

	<u>Year one</u>	<u>Year two</u>	
A)	\$27.50	\$35.25	✗
B)	\$25.22	\$35.25	✗
C)	\$25.22	\$29.80	✓

#### Explanation

First, we need to calculate the required rate of return. When a stock's beta equals 1, the required return is equal to the market return, or 10.0%. Thus,  $k_e = 0.10$ . *Alternative:* Using the capital asset pricing model (CAPM),  $k_e = R_f + \text{Beta} * (R_m - R_f) = 4.5\% + 1 * (10.0\% - 4.5\%) = 4.5\% + 5.5\% = 10.0\%$ .

Next, we need to calculate the dividends for years 1 and 2.

- $D_1 = D_0 \times (1 + g) = 2.50 \times (1.10) = 2.75$
- $D_2 = D_1 \times (1 + g) = 2.75 \times (1.10) = 3.03$

Then, we use the one-year holding period DDM to calculate the present value of the expected stock cash flows (assuming the one-year hold).

- $P_0 = [D_1 / (1 + k_e)] + [P_1 / (1 + k_e)] = [\$2.75 / (1.10)] + [\$25.0 / (1.10)] = \mathbf{\$25.22}$ . *Shortcut:* since the growth rate in dividends,  $g$ , was equal to  $k_e$ , the present value of next year's dividend is equal to last year's dividend.

Finally, we use the multi-period DDM to calculate the return for the stock if held for two years.

- $P_0 = [D_1 / (1 + k_e)] + [D_2 / (1 + k_e)^2] + [P_2 / (1 + k_e)^2] = [\$2.75 / (1.10)] + [\$3.03 / (1.10)^2] + [\$30.0 / (1.10)^2] = \mathbf{\$29.80}$ . *Note:* since the growth rate in dividends,  $g$ , was equal to  $k_e$ , the present value of next year's dividend is equal to last year's dividend (for periods 1 and 2). Thus, a quick calculation would be  $2.5 \times 2 + \$30.00 / (1.10)^2 = 29.80$ .

(Study Session 15, Module 49.2, LOS 49.g)

## Question #132 of 142

Which of the following statements regarding price multiples is *most* accurate?

- A) A disadvantage of the price/book value ratio is that it is not an appropriate measure for firms that primarily hold liquid assets.



**B)** A rationale for using the price/cash flow ratio is that there is only one clear definition of cash flow.



**C)** An advantage of the price/sales ratio is that it is meaningful even for distressed firms.



#### Explanation

The P/S ratio is meaningful even for distressed firms, since sales revenue is always positive. This is not the case for the P/E and P/BV ratios, which can be negative.

In the P/BV ratio book value is an appropriate measure of net asset value for firms that primarily hold liquid assets.

Analysts use several different definitions of cash flow (CFO, adjusted CFO, FCFE, EBITDA, etc.) to calculate P/CF ratios.

When earnings are negative, the P/E ratio is meaningless.

(Study Session 15, Module 49.3, LOS 49.i)

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### Question #133 of 142

A stock has a required return of 14% percent, a constant growth rate of 5% and a retention rate of 60%. The firm's P/E ratio should be:

**A)** 4.44.



**B)** 5.55.



**C)** 6.66.



#### Explanation

$P/E = (1 - RR) / (k - g) = 0.4 / (0.14 - 0.05) = 4.44$

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #134 of 142

General, Inc., has net income of \$650,000 and one million shares outstanding. The profit margin is 6 percent and General, Inc., is selling for \$30.00. The price/sales ratio is equal to:

**A)** 0.65.



**B)** 10.83.



**C)** 2.77.



#### Explanation

6% profit margin = \$650,000/x; x (sales) = \$10,833,333.

Sales per share = \$10.83 M/1,000,000 = \$10.83 per share.

P/Sales = \$30.00/\$10.83 = 2.77.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #135 of 142

Which of the following is *least likely* an advantage of using price/sales (P/S) multiple?

- A) P/S multiples are more reliable because sales data cannot be distorted by management. ✔
- B) P/S multiples are not as volatile as P/E multiples and hence may be more reliable in valuation analysis. ✘
- C) P/S multiples provide a meaningful framework for evaluating distressed firms. ✘

#### Explanation

Accounting data on sales is used to calculate the P/S multiple. The P/S multiple is thought to be more reliable because sales figures are not as easy to manipulate as the earnings and book value, both of which are significantly affected by accounting conventions. However, it is not true that "sales data cannot be distorted by management" because aggressive revenue recognition practices can influence reported sales.

(Study Session 15, Module 49.3, LOS 49.m)

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### Question #136 of 142

Which of the following is NOT a determinant of the expected price/earnings (P/E) ratio?

- A) Average debt to capital ratio (D/C). ✔
- B) Expected dividend payout ratio (D/E). ✘
- C) Expected growth rate in dividends (g). ✘

#### Explanation

The P/E ratio is determined by payout ratio D/E, required return  $K_e$ , and expected growth g.

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #137 of 142

A preferred stock's dividend is \$5 and the firm's bonds currently yield 6.25%. The preferred shares are priced to yield 75 basis points below the bond yield. The price of the preferred is *closest* to:

- A) \$90.91. ✔
- B) \$80.00. ✘
- C) \$5.00. ✘

#### Explanation

Preferred stock yield ( $K_p$ ) = bond yield – 0.75% = 6.25% – 0.75% = 5.5%




Value = dividend /  $K_p$  = \$5 / 0.055 = \$90.91.

(Study Session 15, Module 49.2, LOS 49.f)

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### Question #138 of 142

An asset-based valuation model is *most appropriate* for a company that:

- A) has a high proportion of intangible assets among its total assets. 
- B) is expected to remain profitable for the foreseeable future. 
- C) is likely to be liquidated. 

#### Explanation




For companies that are likely to be liquidated, the asset-based approach may be the most appropriate value as the assets may be worth more to another entity. Asset-based valuation models do not work well for companies that have large amounts of intangible assets. Because asset-based valuation is not forward-looking, an asset-based approach may underestimate the value of companies that are expected to be profitable.

(Study Session 15, Module 49.3, LOS 49.I)

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### Question #139 of 142

If the expected dividend payout ratio of a firm is expected to rise from 50 percent to 55 percent, the cost of equity is expected to increase from 10 percent to 11 percent, and the firm's growth rate remains at 5 percent, what will happen to the firm's price-to-equity (P/E) ratio? It will:

- A) increase. 
- B) be unchanged. 
- C) decline. 

#### Explanation

Payout increases from 50% to 55%, cost of equity increases from 10% to 11%, and dividend growth rate stays at 5%, the P/E will change from 10 to 9.16:

$$P/E = (D/E) / (k - g).$$

$$P/E_0 = 0.50 / (0.10 - 0.05) = 10.$$




$$P/E_1 = 0.55 / (0.11 - 0.05) = 9.16.$$

(Study Session 15, Module 49.3, LOS 49.j)

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### Question #140 of 142

Company B paid a \$1.00 dividend per share last year and is expected to continue to pay out 40% of its earnings as dividends for the foreseeable future. If the firm is expected to earn a 10% return on equity in the future, and if an investor requires a 12% return on the stock, the stock's value is *closest* to:

- A) \$16.67. 
- B) \$12.50. 
- C) \$17.67. 

#### Explanation



$$P_0 = \text{Value of the stock} = D_1 / (k - g)$$

$$g = (RR)(ROE)$$

$$RR = 1 - \text{dividend payout} = 1 - 0.4 = 0.6$$

$$ROE = 0.1$$

$$g = (0.6)(0.1) = 0.06$$

$$D_1 = (D_0)(1 + g) = (1)(1 + 0.06) = \$1.06$$

$$P_0 = 1.06 / (0.12 - 0.06) = 1.06 / 0.06 = \$17.67$$

(Study Session 15, Module 49.2, LOS 49.g)

### Question #141 of 142

A firm has an expected dividend payout ratio of 48 percent and an expected future growth rate of 8 percent. What should the firm's price to earnings ratio (P/E) be if the required rate of return on stocks of this type is 14 percent and what is the retention ratio of the firm?

	<u>P/E ratio</u>	<u>Retention ratio</u>	
A)	6.5	52%	✗
B)	6.5	48%	✗
C)	8.0	52%	✓

#### Explanation

$$P/E = (\text{dividend payout ratio}) / (k - g)$$

$$P/E = 0.48 / (0.14 - 0.08) = 8$$

$$\text{The retention ratio} = (1 - \text{dividend payout}) = (1 - 0.48) = 52\%$$

(Study Session 15, Module 49.3, LOS 49.j)

### Question #142 of 142

The price to book value ratio (P/BV) is a helpful valuation technique when examining firms:

- A) that hold primarily liquid assets. ✓
- B) with the same stock prices. ✗
- C) with older assets compared to those with newer assets. ✗

#### Explanation

P/BV analysis works best for firms that hold primarily liquid assets.

(Study Session 15, Module 49.3, LOS 49.i)