Finance 300 - Additional Sample Questions
Chapters 6,7,8,9,10,11,12,15,19

Multiple Choice

1. Stock A and Stock B each have an expected return of 12 percent, a beta of 1.2, and a standard deviation of 25 percent. The returns on the two stocks have a correlation of 0.6. Portfolio P has half of its money invested in Stock A and half in Stock B. Which of the following statements is most correct?

   a. Portfolio P has an expected return of 12 percent.
   b. Portfolio P has a standard deviation of 25 percent.
   c. Portfolio P has a beta of 1.2.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

2. Given the following information, determine which beta coefficient for Stock A is consistent with equilibrium:

$$k_A = 11.3\%; \quad k_{RF} = 5\%; \quad k_M = 10\%$$

   a. 0.86
   b. 1.26
   c. 1.10
   d. 0.80
   e. 1.35

3. You are an investor in common stock, and you currently hold a well-diversified portfolio that has an expected return of 12 percent, a beta of 1.2, and a total value of $9,000. You plan to increase your portfolio by buying 100 shares of AT&E at $10 a share. AT&E has an expected return of 20 percent with a beta of 2.0. What will be the expected return and the beta of your portfolio after you purchase the new stock?

   a. $k_p = 20.0\%$; $b_p = 2.00$
   b. $k_p = 12.8\%$; $b_p = 1.28$
   c. $k_p = 12.0\%$; $b_p = 1.20$
   d. $k_p = 13.2\%$; $b_p = 1.40$
   e. $k_p = 14.0\%$; $b_p = 1.32$

4. Other things held constant, if a bond indenture contains a call provision, the yield to maturity that would exist without such a call provision will generally be _____ the YTM with a call provision.

   a. Higher than
   b. Lower than
   c. The same as
   d. Either higher or lower (depending on the level of the call premium) than
   e. Unrelated to

5. Which of the following statements is most correct?

   a. Retiring bonds under a sinking fund provision is similar to calling bonds under a
      call provision in the sense that bonds are repurchased by the issuer prior to
      maturity.
   b. Under a sinking fund, bonds will be purchased on the open market by the issuer when
      the bonds are selling at a premium and bonds will be called in for redemption when
      the bonds are selling at a discount.
   c. The sinking fund provision makes a debt issue less risky to the investor.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

6. A $1,000 par value bond pays interest of $35 each quarter and will mature in 10 years.
   If your nominal annual required rate of return is 12 percent with quarterly
   compounding, how much should you be willing to pay for this bond?

   a. $ 941.36
   b. $1,051.25
   c. $1,115.57
   d. $1,391.00
   e. $ 825.49

7. Most studies of stock market efficiency suggest that the stock market is highly
   efficient in the weak form and reasonably efficient in the semistrong form. Based on
   these findings which of the following statements are correct?

   a. Information you read in *The Wall Street Journal* today cannot be used to select
      stocks that will consistently beat the market.
   b. The stock price for a company has been increasing for the past 6 months. Based on
      this information it must be true that the stock price will also increase during the
      current month.
   c. Information disclosed in companies' most recent annual reports can be used to
      consistently beat the market.
   d. Statements a and c are correct.
   e. All of the statements above are correct.

8. Johnston Corporation is growing at a constant rate of 6 percent per year. It has both
   common stock and non-participating preferred stock outstanding. The cost of preferred
   stock (k_p) is 8 percent. The par value of the preferred stock is $120, and the stock
   has a stated dividend of 10 percent of par. What is the market value of the preferred
   stock?

   a. $125
   b. $120
   c. $175
   d. $150
   e. $200

9. The last dividend paid by Klein Company was $1.00. Klein's growth rate is expected to
   be a constant 5 percent for 2 years, after which dividends are expected to grow at a
   rate of 10 percent forever. Klein's required rate of return on equity (k_s) is 12
   percent. What is the current price of Klein's common stock?

   a. $21.00
   b. $33.33
   c. $42.25
   d. $50.16
   e. $58.75

10. Project A has an internal rate of return (IRR) of 15 percent. Project B has an IRR of 14 percent. Both projects have a cost of capital of 12 percent. Which of the following statements is most correct?

    a. Both projects have a positive net present value (NPV).
    b. Project A must have a higher NPV than Project B.
    c. If the cost of capital were less than 12 percent, Project B would have a higher IRR than Project A.
    d. Statements a and c are correct.
    e. All of the statements above are correct.

Financial Calculator Section

11. Oak Furnishings is considering a project that has an up-front cost and a series of positive cash flows. The project's estimated cash flows are summarized below:

Year	Project Cash Flow
0	?
1	$500 million
2	300 million
3	400 million
4	600 million

    The project has a payback of 2.25 years. What is the project's internal rate of return (IRR)?

    a. 23.1%
    b. 143.9%
    c. 17.7%
    d. 33.5%
    e. 41.0%

12. Heller Airlines is considering two mutually exclusive projects, A and B. The projects have the same risk. Below are the cash flows from each project:

Year	Project A Cash Flow	Project B Cash Flow
0	-$2,000	-$1,500
1	700	300
2	700	500
3	1,000	800
4	1,000	1,100

    At what cost of capital would the two projects have the same NPV?

    a. 68.55%
    b. 4.51%
    c. 26.67%
    d. 37.76%
    e. 40.00%

13. Which of the following statements is most correct?

    a. Sensitivity analysis is a good way to measure market risk because it explicitly
       takes into account the effects of diversification.
    b. One advantage of sensitivity analysis relative to scenario analysis is it
       explicitly takes into account the probability of certain effects occurring, whereas
       scenario analysis does not take into account probabilities.
    c. Simulation analysis is a computerized version of scenario analysis that uses
       continuous probability distributions of the input variables.
    d. Statements a and b are correct.
    e. All of the statements above are correct.

    Multiple Part:

    (The information below applies to the following problems.)

    [MACRS table required]

    The president of Real Time Inc. has asked you to evaluate the proposed acquisition of
    a new computer. The computer's price is $40,000, and it falls into the MACRS 3-year
    class. Purchase of the computer would require an increase in net operating working
    capital of $2,000. The computer would increase the firm's before-tax revenues by
    $20,000 per year but would also increase operating costs by $5,000 per year. The
    computer is expected to be used for three years and then be sold for $25,000. The
    firm's marginal tax rate is 40 percent, and the project's cost of capital is 14
    percent.

14. What is the net investment required at t = 0?

    a. -$42,000
    b. -$40,000
    c. -$38,600
    d. -$37,600
    e. -$36,600

15. What is the operating cash flow in Year 2?

    a. $ 9,000
    b. $10,240
    c. $11,687
    d. $13,453
    e. $16,200

16. What is the total value of the terminal year non-operating cash flows at the end of
    Year 3?

    a. $18,120
    b. $19,000
    c. $21,000
    d. $25,000
    e. $27,000

17. What is the project's NPV?

    a. $2,622
    b. $2,803
    c. $2,917
    d. $5,712
    e. $6,438

18. A *decrease* in a firm's willingness to pay dividends is likely to result from an increase in its

    a. Earnings stability.
    b. Access to capital markets.
    c. Profitable investment opportunities.
    d. Collection of accounts receivable.
    e. Stock price.

19. Which of the following statements is most correct?

    a. The tax preference hypothesis suggests that companies can reduce their costs of capital by increasing their dividend payout ratios.
    b. One advantage of the residual dividend policy is that it leads to a stable dividend payout, which is desired by investors.
    c. Firms with a large number of investment opportunities and a relatively small amount of cash tend to have above average dividend payouts.
    d. Statements a and b are correct.
    e. None of the statements above is correct.

20. Which of the following are reasons why companies move into international operations?

    a. To take advantage of lower production costs in regions of inexpensive labor.
    b. To develop new markets for their finished products.
    c. To better serve their primary customers.
    d. Because important raw materials are located abroad.
    e. All of the statements above are correct.

21. A product sells for $750 in the United States. The exchange rate is such that $1 equals 1.0279 euro. If purchasing power parity (PPP) holds, what is the price of the product (in euros) in the EMU countries?

    a. 123.750 euros
    b. 454.550 euros
    c. 750.000 euros
    d. 770.925 euros
    e. 925.393 euros

22. If $100 is placed in an account that earns a nominal 4 percent, compounded quarterly, what will it be worth in 5 years?

    a. $122.02
    b. $105.10
    c. $135.41
    d. $120.90
    e. $117.48

23. In 1958 the average tuition for one year at an Ivy League school was $1,800. Thirty years later, in 1988, the average cost was $13,700. What was the growth rate in tuition over the 30-year period?

    a. 12%
    b. 9%
    c. 6%
    d. 7%
    e. 8%

24. South Penn Trucking is financing a new truck with a loan of $10,000 to be repaid in 5 annual end-of-year installments of $2,504.56. What annual interest rate is the company paying?

    a. 7%
    b. 8%
    c. 9%
    d. 10%
    e. 11%

25. Foster Industries has a project that has the following cash flows:

Year	Cash Flow
0	-$300.00
1	100.00
2	125.43
3	90.12
4	?

    What cash flow will the project have to generate in the fourth year in order for the project to have a 15 percent rate of return?

    a. $ 15.55
    b. $ 58.95
    c. $100.25
    d. $103.10
    e. $150.75

26. The current price of a 10-year, $1,000 par value bond is $1,158.91. Interest on this bond is paid every six months, and the nominal annual yield is 14 percent. Given these facts, what is the annual coupon rate on this bond?

    a. 10%
    b. 12%
    c. 14%
    d. 17%
    e. 21%

27. Which of the following will increase a company's retained earnings break point?

    a. An increase in its net income.
    b. An increase in its dividend payout.
    c. An increase in the amount of equity in its capital structure.
    d. An increase in its capital budget.
    e. All of the statements above are correct.

Multiple Part:

(The information below applies to the following problems.)

The Global Advertising Company has a marginal tax rate of 40 percent. The company can raise debt at a 12 percent interest rate and the last dividend paid by Global was $0.90. Global's common stock is selling for $8.59 per share, and its expected growth rate in earnings and dividends is 5 percent. If Global issues new common stock, the flotation cost incurred will be 10 percent. Global plans to finance all capital expenditures with 30 percent debt and 70 percent equity.

28. What is Global's cost of retained earnings if it can use retained earnings rather than issue new common stock?

    a. 12.22%
    b. 17.22%
    c. 10.33%
    d. 9.66%
    e. 16.00%

29. What is the cost of common equity raised by selling new stock?

    a. 12.22%
    b. 17.22%
    c. 10.33%
    d. 9.66%
    e. 16.00%

30. What is the firm's weighted average cost of capital if the firm has sufficient retained earnings to fund the equity portion of its capital budget?

    a. 11.95%
    b. 12.22%
    c. 12.88%
    d. 13.36%
    e. 14.21%

ANSWER KEY FOR TEST - SU02FES1

1. d
Portfolio risk and return

Remember, for portfolios you can take averages of betas and returns, but not standard deviations. So, the portfolio will have a return of 12 percent (because both stocks have returns of 12 percent) and a beta of 1.2 (both stocks have betas of 1.2). However, since the correlation coefficient is less than 1.0, the portfolio's standard deviation will be less than the average of the two stocks' standard deviations. (That is, the portfolio's standard deviation will be less than 25 percent.) So, statements a and c are correct; therefore, the correct choice is statement d.

Chapter:6   QUESTION: 14

2. b
Beta coefficient

In equilibrium

$k_A = \hat{k}_A = 11.3\%.$
$k_A = k_{RF} + (k_M - k_{RF})b$
$11.3\% = 5\% + (10\% - 5\%)b$
$b = 1.26.$

Chapter:6   QUESTION: 57

3. b
Portfolio return

$\hat{k}_p = 0.9(12\%) + 0.1(20\%) = 12.8\%.$
$b_p = 0.9(1.2) + 0.1(2.0) = 1.28.$

Chapter:6   QUESTION: 60

4. b
Call provision

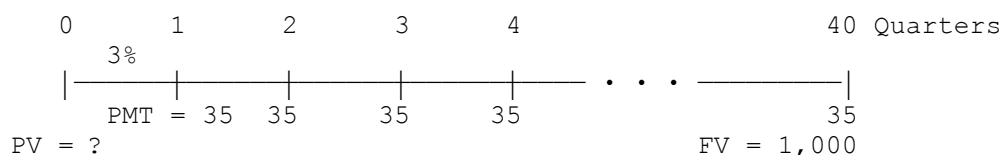Chapter:8   QUESTION: 9

5. d
Sinking fund provision

Statements a and c are correct; therefore, statement d is the correct choice. Bonds will be purchased on the open market when they are selling at a discount and will be called for redemption when the price of the bonds exceeds the redemption price.

Chapter:8   QUESTION: 22

6. c
   Bond value - quarterly payment

   Time Line:

   ```
        0      1      2      3      4                   40 Quarters
            3%
        |——————+——————+——————+——————+—————  · · ·  ————————|
            PMT = 35   35    35     35                      35
        PV = ?                                          FV = 1,000
   ```

   Tabular solution:
   $V_B = \$35(PVIFA_{3\%,40}) + \$1,000(PVIF_{3\%,40})$
   $= \$35(23.1148) + \$1,000(0.3066) = \$1,115.62.$

   Financial calculator solution:
   Inputs: N = 40; I = 3; PMT = 35; FV = 1,000.
   Output: PV = -$1,115.57; V_B = $1,115.57.

                         Chapter:8   QUESTION: 59

7. a
   Market efficiency

   Statement a is correct; the other statements are false. Historical information cannot
   be used to beat the market under weak-form efficiency. Public information cannot be
   used to beat the market under semistrong-form efficiency.
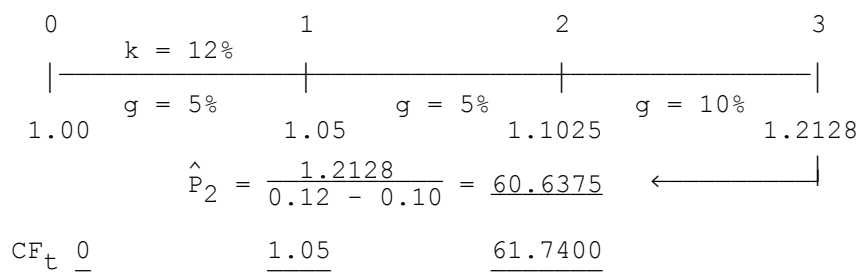   Chapter:9   QUESTION: 18

8. d
   Preferred stock value

   The dividend is calculated as 10% × $120 = $12. We know that the cost of preferred
   stock is equal to the dividend divided by the stock price or 8% = $12/Price. Solve
   this expression for Price = $150. (Note: Non- participating preferred stockholders are
   entitled to just the stated dividend rate. There is no growth in the dividend.)
                         Chapter:9   QUESTION: 37

9. d
   Nonconstant growth stock

   ```
        0                1                2                3
           k = 12%
        |————————————————+————————————————+————————————————|
           g = 5%           g = 5%           g = 10%
        1.00             1.05             1.1025           1.2128

                   ^            1.2128
                   P₂ = ———————————————— = 60.6375   ⟵————————|
                         0.12 - 0.10

        CFₜ  0             1.05            61.7400
            =             ====            =======
   ```

   $\hat{P}_2 = \dfrac{1.2128}{0.12 - 0.10} = 60.6375$

   Numerical solution:
   $P_0 = \dfrac{\$1.05}{(1.12)} + \dfrac{\$61.74}{(1.12)^2} = \$50.16.$

   Financial calculator solution:
   Enter in CFLO register $CF_0 = 0$, $CF_1 = 1.05$, and $CF_2 = 61.74$.
   Then enter I = 12, and press NPV to get NPV = P_0 = $50.16.

                         Chapter:9   QUESTION: 50

10. a
   NPV and IRR

   Statement a is true; projects with IRRs greater than the cost of capital will have a
   positive NPV. Statement b is false because you know nothing about the relative
   magnitudes of the projects. Statement c is false because the IRR is independent of the
   cost of capital. Therefore, the correct choice is statement a.
                                                    Chapter:11   QUESTION: 10

11. d
   IRR, payback, and missing cash flow

   Step 1: Determine the cash outflow at t = 0:
          The payback is 2.25 years, so the cash flow will be:
          $CF_0 = -[\, CF_1 + CF_2 + 0.25(CF_3)]$
              $= -[\, \$500 + \$300 + 0.25(\$400)]$
              $= -\$900.$

   Step 2: Calculate the IRR:
          $CF_0 = -900; CF_1 = 500; CF_2 = 300; CF_3 = 400; CF_4 = 600;$ and
          then solve for IRR = 33.49% ≈ 33.5%.
                                                    Chapter:11   QUESTION: 66

12. c
   Crossover rate

   Step 1: Determine the differential cash flows between Projects A and
          B:

Year	Project A Cash Flow	Project B Cash Flow	ΔCFs A − B
0	-$2,000	-$1,500	-$500
1	700	300	400
2	700	500	200
3	1,000	800	200
4	1,000	1,100	-100

   Step 2: Calculate the IRR of the differential cash flows:
          Enter the following data in the calculator:
          CF0 = -500; CF1 = 400; CF2 = 200; CF3 = 200; CF4 = -100; and
          then solve for IRR = 26.67%.
                                                    Chapter:11   QUESTION: 74

13. c
   Sensitivity, scenario, and simulation analyses

   Statement a is false; sensitivity analysis measures a project's stand-alone risk.
   Statement b is false; sensitivity analysis doesn't take into account probabilities,
   while scenario analysis does. Statement c is correct.
                                                    Chapter:12   QUESTION: 13

14. a
   New project investment

   Initial investment:
   Cost   ($40,000)
   Change in NOWC   (2,000)
                               ($42,000)
                               ========

                                                    Chapter:12   QUESTION: 48

15. e
    Operating cash flow

    Depreciation schedule:
    Depreciable basis = $40,000.

Year	MACRS Depreciation Rate	Depreciable Basis	Annual Depreciation
1	0.33	$40,000	$13,200
2	0.45	40,000	18,000
3	0.15	40,000	6,000
4	0.07	40,000	2,800
			$40,000

    Operating cash flows:

Year	1	2	3
1) Increase in revenues	$20,000	$20,000	$20,000
2) Increase in costs	(5,000)	(5,000)	(5,000)
3) Before-tax change in earnings	15,000	15,000	15,000
4) After-tax change in earnings (line 3 × 0.60)	9,000	9,000	9,000
5) Depreciation	13,200	18,000	6,000
6) Tax savings deprec. (line 6 × 0.40)	5,280	7,200	2,400
7) Net operating CFs (line 4 + 6)	$14,280	$16,200	$11,400

                                Chapter:12   QUESTION: 49

16. a
    Non-operating cash flows

    Additional Year 3 cash flows:

	3
Salvage value	$25,000
Tax on Salvage value	(8,880)*
Recovery of NOWC	2,000
	$18,120

    *(Market value – Book value)(Tax rate)
        ($25,000 – $2,800)(0.40) = $8,880.

                                Chapter:12   QUESTION: 50

17. c
    New project NPV

    Time line:

```
    0               1               2            3 Years
         k = 14%
    |───────────────|───────────────|───────────────|

 -42,000        14,280          16,200          11,400
                                          TV =  18,120
                                                29,520
```

    Tabular solution:
    $NPV_{k = 14\%} = -\$42,000 + \$14,280(PVIF_{14\%,1})$
    $\quad\quad + \$16,200(PVIF_{14\%,2}) + \$29,520(PVIF_{14\%,3})$
    $\quad\quad = -\$42,000 + \$14,280(0.8772) + \$16,200(0.7695)$
    $\quad\quad + \$29,520(0.6750) = \$2,918.32.$

    Financial calculator solution:
    Inputs: $CF_0 = -42,000$; $CF_1 = 14,280$; $CF_2 = 16,200$; $CF_3 = 29,520$;
    $\quad\quad I = 14.$
    Output: NPV = $2,916.85 ≈ $2,917.

    Note: Tabular solution differs from calculator solution due to
          interest factor rounding.
                              Chapter:12   QUESTION: 51

18. c
    Dividend payout
                              Chapter:15   QUESTION: 4

19. e
    Miscellaneous dividend concepts

    Statement e is the correct choice. The tax preference theory suggests that individuals
    prefer capital gains to dividends due to the capital gains preferential tax treatment.
    A residual dividend policy leads to an unstable dividend payment. The residual policy
    is used only to develop a long-run dividend payout policy. A firm with a large number
    of investment opportunities and a small amount of cash would have a low dividend
    payout.
                              Chapter:15   QUESTION: 15

20. e
    International operations motivation
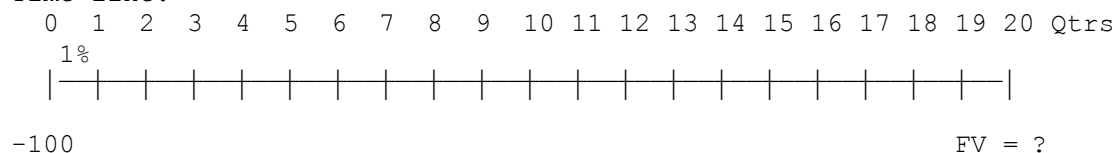   Chapter:19   QUESTION: 1

21. d
    Purchasing power parity

    $750 equals 770.925 [(750)(1.0279)] euros. If PPP holds, the product should cost the
    same in both markets.
                              Chapter:19   QUESTION: 20

22. a
    Quarterly compounding

    Time line:
```
  0  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20 Qtrs
    1%
    ├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤
-100                                                            FV = ?
```

    Tabular solution:
    $100(FVIF_{1\%,20}) = \$100(1.2202) = \$122.02$.

    Financial calculator solution:
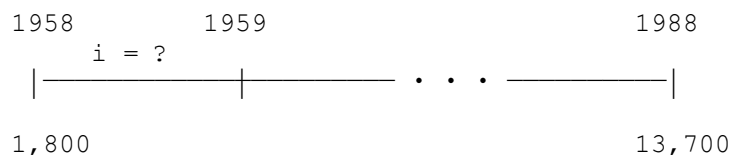   Inputs: N = 20; I = 1; PV = -100; PMT = 0. Output: FV = $122.02.
                                    Chapter:7   QUESTION: 25

23. d
    Growth rate

    Time Line:
```
1958          1959                          1988
      i = ?
    ├─────────────┼───────── . . . ─────────┤
1,800                                       13,700
```

    Tabular solution:
    $13,700 = \$1,800(FVIF_{i,30})$
    $FVIF_{i,30} = 7.6111$
    $i \approx 7\%$.

    Financial calculator solution:
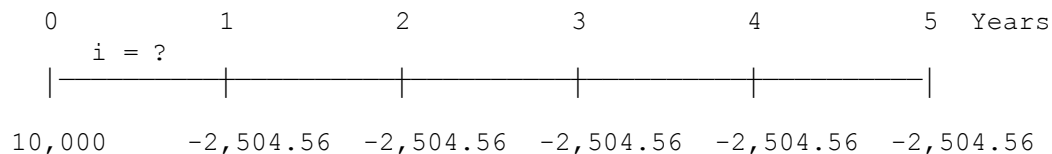   Inputs: N = 30; PV = -1,800; PMT = 0; FV = 13,700. Output: I = 7.0%.
                                    Chapter:7   QUESTION: 26

24. b
    Interest rate

    Time Line:
```
  0          1          2          3          4          5  Years
    i = ?
    ├──────────┼──────────┼──────────┼──────────┼──────────┤
10,000    -2,504.56  -2,504.56  -2,504.56  -2,504.56  -2,504.56
```

    Tabular solution:
    $10,000 = \$2,504.56(PVIFA_{i,5})$
    $PVIFA_{i,5} = \$10,000/\$2,504.56 = 3.9927$
    $i = 8\%$.

    Financial calculator solution:
    Inputs: N = 5; PV = 10,000; PMT = -2,504.56; FV = 0. Output: I = 8%.
                                    Chapter:7   QUESTION: 28

25. d
    Value of missing cash flow

    Tabular solution:
    PV = -$300 + ($100)(0.8696) + ($125.43)(0.7561) + ($90.12)(0.6575)
       = -$58.95.
    Now, solve for CF_4:

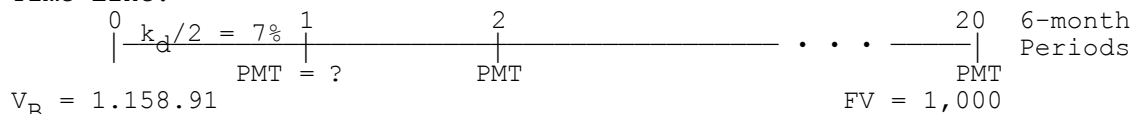 $$\$58.95(1.15)^4 = \$103.10.$$

    Financial calculator solution:
    Enter the first 4 cash flows, enter I = 15, and solve for NPV = $58.945. The future
    value of $58.945 will be the required cash flow.
    PV = -58.945; N = 4; I/YR = 15; PMT = 0; and then solve for FV = $103.10.

                                        Chapter:7   QUESTION: 42

26. d
    Bond coupon rate

    Time Line:
    ```
    0  k_d/2 = 7%  1            2                        20  6-month
    |————————————|————————————|———————— • • • ————————|  Periods
                 PMT = ?       PMT                     PMT
    V_B = 1.158.91                                     FV = 1,000
    ```

    Tabular solution:
    $1,158.91 = PMT(PVIFA$_{7\%,20}$) + $1,000(PVIF$_{7\%,20}$)
              = PMT(10.5940) + $1,000(0.2584)
       PMT = $900.51/10.5940 = $85.
    Annual coupon rate = (2)($85)/$1,000 = 17%.

    Financial calculator solution:
    Inputs: N = 20; I = 7; PV = -1,158.91; FV = 1,000.
    Output: PMT = $85.00 (semiannual PMT).
    Annual coupon rate = $85(2)/$1,000 = 17.0%.

                                        Chapter:8   QUESTION: 72

27. a
    Retained earnings break point

    Statement a is true; an increase in net income will increase the retained earnings
    break point. Statements b and c will serve to lower the break point. Statement b will
    result in less earnings being retained, so the retained earnings break point will be
    reduced. Statement c will result in more earnings being needed, so the retained
    earnings break point will be reduced. Statement d will have no effect on the retained
    earnings break point.
                                        Chapter:10   QUESTION: 14

28. e
    Cost of retained earnings

    $$k_s = \frac{\$0.90(1.05)}{\$8.59} + 0.05 = 0.1600 = 16.00\%.$$

                                        Chapter:10   QUESTION: 78

29. b
     Cost of external equity

$$k_e = \frac{\$0.90(1.05)}{\$8.59(1 - 0.10)} + 0.05 = 0.1722 = 17.22\%.$$

Chapter:10   QUESTION: 79

30. d
     WACC

     Since the firm can fund the equity portion of its capital budget with retained earnings, use k_s in WACC.

$$WACC = w_d k_d (1 - T) + w_c k_s$$
$$= 0.3(0.12)(1 - 0.4) + 0.7(0.16)$$
$$= 0.0216 + 0.112$$
$$= 0.1336 = 13.36\%.$$

Chapter:10   QUESTION: 80