

1. You are seeking a mortgage to buy a house. You can either get a mortgage quoted at 6.5% per year compounded monthly or a mortgage quoted at 6.7% compounded quarterly. Which rate should you accept and why?
 - a. You shouldn't take either rate because they're quoted and the bank is trying to fool you.
 - b. You should take the 6.5% quoted rate because it's lower than the 6.7% quoted rate.
 - c. You should take the 6.5% quoted rate because its EAR will be lower than the EAR of the 6.7% quoted rate.
 - d. You should take the 6.5% quoted rate because its effective daily rate is 0.0178% which is lower than the effective quarterly rate of 1.675% offered by the alternative.
 - e. You should take the 6.7% quoted rate because its EAR is 6.87% which is less than EAR of the 6.5% quoted rate.

2. A bond has a current price of \$1900, has 20 years to maturity and pays an annual coupon of \$250. The face value of the bond is \$1000. What is the yield to maturity of this bond?
 - a. The YTM is 7.12%
 - b. The YTM is 10.69%
 - c. The YTM is 12.54%
 - d. The YTM is 20%
 - e. The YTM is 22.6%

PV = -1900 FV = 1000 N = 20 PMT = 250
CPT I/Y = 12.54

3. You're about to retire and are currently earning \$155K/year. If you'd like to have 70% of your current income in your retirement years, expect to live 20 years after retirement and believe you can earn 10%/year in the stock market, how much must you have saved to meet your desires? For simplicity, assume you make one annual withdrawal at the end of year.
 - a. \$3.1M
 - b. \$2.17M
 - c. \$1.32M
 - d. \$923K
 - e. \$1.085M

FV = 0 PMT = 0.7 * 155000 = 108500 I/Y = 10 N = 20
CPT PV = 923721

4. What is the ultimate financial goal of the firm?
 - a. To maximize total profits.
 - b. To maximize earnings per share.
 - c. To maximize shareholder wealth.
 - d. To maximize the interests of all stakeholders.

5. Shareholders focus on the risk of their investment portfolio while managers are more concerned with the continued existence of the firm. This is an example of which type of problem?
- Measurement.
 - Financing.
 - Appraisal.
 - Agency.
6. What is the future value in 7 years of \$1,000 invested today at a simple rate of interest of 3% per semi-annual period?
- \$1,513
 - \$1,420
 - \$1,210
 - \$1,000
- $\$1,000 + [\$1,000 \times 0.03 \times 14] = \$1,420$
7. What is the present value in 5 years of \$10,000 paid at the end of every year in perpetuity, if the first payment occurs 10 years from today? The applicable interest rate is 5% per annum.
- \$200,000
 - \$164,540
 - \$156,705
 - \$122,783
- $\$10,000 / 0.05 = \$200,000$
 $\$200,000 \text{ FV, 4 N, 5 I, CPT PV} = -\$164,540$
8. An investment earns 4% per semi-annual period. What is the effective weekly rate?
- 0.1481%
 - 0.1510%
 - 0.1624%
 - 0.1799%
- $(1.04)^{2 \times 1/52} - 1 = 0.001510$
9. Which of the following will increase the present value, all else equal?
- More frequent compounding.
 - A higher effective rate.
 - Shifting payments to the beginning of the period.
- I only.
 - II only.
 - III only.
 - I, II and III.

10. The future value of an end-of-year annuity is \$5,525.63. By how much would the future value increase if payments were shifted to the beginning of the period? Assume a 5% effective annual rate.

a. \$276.28

b. \$204.67

c. \$195.32

d. \$138.14

$$\$5,525.63 \times 0.05 = \$276.28$$

11. You pay \$440 a month on your car loan. At a rate of 9%, compounded monthly, what is your loan balance if 17 months remain on your loan?

a. \$7,480

b. \$7,017

c. \$6,998

d. \$5,461

$$\$440 +/- PMT, 17 N, 0.75 I, CPT PV = -\$6,998.21$$

12. What effective annual rate is earned if \$100 is invested at the end of every 3 months for 10 years and grows to \$6,040.20?

a. 6.00%

b. 6.12%

c. 8.00%

d. 8.24%

$$\$6,040.20 FV, \$100 +/- PMT, 40 N, CPT I = 2\% (1.02)^4 - 1 = 8.24\%$$

13. A 5%, \$1,000 par value bond matures in 10 years. Interest is paid annually. In calculating the yield-to-maturity, at what rate are coupon payments assumed to be reinvested? The bond is priced at \$798.70.

a. 5%

b. 6%

c. 7%

d. 8%

$$\$798.70 +/- PV, \$1,000 FV, \$50 PMT, CPT I = 8\%$$

14. When will a bond's current yield always equal its yield-to-maturity?

a. When it trades at a premium.

b. When it trades at par.

c. When it trades at a discount.

15. A 6%, \$1,000 bond matures in 15 years and trades today at \$1,223.96. Interest is paid semi-annually. If market rates do not change, what will be the bond's value in 5 years?

- a. \$1,789.00
- b. \$1,163.51
- c. \$1,089.82
- d. \$1,000.00

$$\begin{aligned} & \$1,223.96 \text{ +/- PV, } \$1,000 \text{ FV, } \$30 \text{ PMT, CPT I} = 2\% \\ & \$1,000 \text{ FV, } \$30 \text{ PMT, } 20 \text{ N, } 2 \text{ I, CPT PV} = -\$1,163.51 \end{aligned}$$

16. A bond pays semi-annual interest of \$25 each June 30th and December 31st. You have purchased the bond with a September 14th settlement date. The bond is quoted at 95.5. How much would you pay for a \$1,000 par value bond?

- a. \$980.00
- b. \$975.54
- c. \$965.41
- d. \$955.00

$$\$955 + (\$1,000 \times 0.05 \times 76/365) = \$965.41$$

17. A common share's latest annual dividend was \$2.00 per share. The firm's dividends are expected to grow at a constant rate of 5% indefinitely. If investors require a 12%, what is the expected value of the share in 5 years?

- a. \$28.57
- b. \$30.00
- c. \$36.47
- d. \$38.29

$$P_5 = (\$2.00)(1.05)^6 / (0.12 - 0.05) = \$38.29$$

18. Given the following, what is the expected long-term growth rate of the common share dividend? Assume 100% of earnings are reinvested.

Net profit margin	5%
Sales	\$200,000
Liabilities	\$150,000
Equity	\$250,000

- a. 4%
- b. 5%
- c. 6%
- d. 7%

$$\text{Net profits} = 0.05 \times \$200,000 = \$10,000$$

$$\text{ROE} = \$10,000 / \$250,000 = 0.04$$

19. A firm's latest earnings per share were \$2.00. Investors require a return of 10% for investments of this level of risk. If the present value of growth opportunities per share is \$5, what is the price of the share?

- a. \$15
- b. \$20
- c. \$25
- d. \$30

$$P \text{ with no growth} = \$2.00/0.10 = \$20$$

$$P \text{ with growth} = \$20 + \$5 = \$25$$

20. A common share's expected dividend yield is 3% and its expected capital gains yield is 5%. If it trades at \$24.50, what dividend per share has it just paid?

- a. \$0.700
- b. \$0.735
- c. \$1.167
- d. \$1.225

$$\text{Dividend yield} = 0.03 = \text{Div}_1/\$24.50, \text{ therefore } \text{Div}_1 = \$0.735$$

$$\text{Div}_0 = \$0.735/1.05 = \$0.70$$

21. If Treasury Bills are yielding 2% and inflation is forecast at 3%, which statement is true?

- a. The risk-free rate is 5%.
- b. The risk-free rate is -1%.
- c. The real rate is 5%.
- d. The real rate is -1%.

$$\text{RF} = \text{real rate} + \text{expected inflation}$$

$$\text{Real rate} = \text{RF} - \text{Inflation} = 0.02 - 0.03 = -0.01$$

22. Which of the following is an advantage of ownership of a corporation compared to that of a sole proprietorship?

- a. The owners of the corporation have unlimited liability for the firm's debts.
- b. It is the simplest to start.
- c. The corporation has an unlimited life.
- d. Dividends received by the corporation's shareholders are tax-exempt.
- e. It is more difficult to transfer ownership in a corporation.

23. James wants to eat apples. He notices at the beginning of the year and apple sells for \$1.50 and at the end of the same year it sells for \$1.35. During that same period each dollar James invested in the stock market became of a value of \$1.20. James concludes that his real return is 30%. Which of the following statements most accurately describes this situation?

- a. James has employed the Fisher equation
- b. Inflation was 10% over the year
- c. Stock market returns were 32%
- d. Deflation was 11.111%

24. ZZZ bonds are trading at a 10% discount under face value which is \$1000/bond. The bonds pay a coupon every 6 months equal to 3% of the face value. The bonds have 66 months to maturity. The annual effective YTM of these bonds is closest to? <Hint: You must use your financial calculator for this question>

- a. 1.979%
- b. 3%
- c. 4%
- d. 6%
- e. 8.5%

$$FV = 1000 \quad PV = -900 \quad PMT = 30 \quad N = 11$$

$$CPT \ I/Y = 4.1508$$

$$QR = (1.041508)^2 - 1 = 8.47\%$$

25. James just won the lottery. He may either receive \$10M today or \$1M a year for the rest of his eternal and immortal life (payments made at year end). At which interest rate is James indifferent between these two choices?

- a. 0%
- b. 2.25%
- c. 5%
- d. 7.75%
- e. 10%

$$1M/K = 10M \rightarrow K = 10\%$$

26. James just used his credit card, with a quoted annual rate of 21% compounded monthly, to buy a \$10K motorcycle. He intends to make monthly payments of \$200. How long will it take him to completely eliminate his debt?

- a. He will eliminate his debt in the first month.
- b. 119.86 months
- c. 101.50 months
- d. 37 months
- e. He will never eliminate this debt as his payments are insufficient to overcome interest earned

$$FV = 0 \quad PMT = 200 \quad PV = -10000 \quad I/Y = 21/12 = 1.75$$

$$CPT \ N = 119.86$$

27. The dividend on Simple Motors common stock will be \$2 in 1 year, \$3.50 in 2 years, and \$5.00 in 3 years. You can sell the stock for \$75 in 3 years. If you require a 10% return on your investment, how much would you be willing to pay for a share of this stock today?

- a. \$59.69
- b. \$64.65
- c. \$64.82
- d. \$65.66
- e. \$71.30

$$P = 2/1.1 + 3.5/1.1^2 + 5/1.1^3 + 75/1.1^3 = 64.82$$

28. ABC Corporation's common stock dividend yield is 2.1%, it just paid a dividend of \$1, and is expected to pay a dividend of \$1.07 one year from now. Dividends are expected to grow at a constant rate indefinitely. What is the required rate of return on ABC stock?

- a. 9.0%
- b. 9.1%
- c. 9.3%
- d. 10.6%
- e. 11.2%

$$P = 1.07/0.021 = 50.95 \rightarrow k = (1.07/50.95)+0.07=9.1\%$$

29. Sleepy, Inc. plans to retain and reinvest all of their earnings for the next 30 years. Beginning in year 31, the firm will begin to pay a \$12.00 per share dividend. The dividend will not subsequently change. Given a required return of 15%, what should the stock sell for today?

- a. \$ 1.21
- b. \$ 2.15
- c. \$ 8.15
- d. \$42.00
- e. \$80.00

$$P = (12/0.15)/1.15^{30}=1.21$$

30. A firm's stock has a required return of 10%. The stock's dividend yield is 6%. What dividend did the firm just pay if the current stock price is \$40?

- a. \$2.18
- b. \$2.31
- c. \$2.50
- d. \$2.87
- e. \$3.60

$$D1=40*0.06=2.4$$

The answer is wrong. Everybody gets this point