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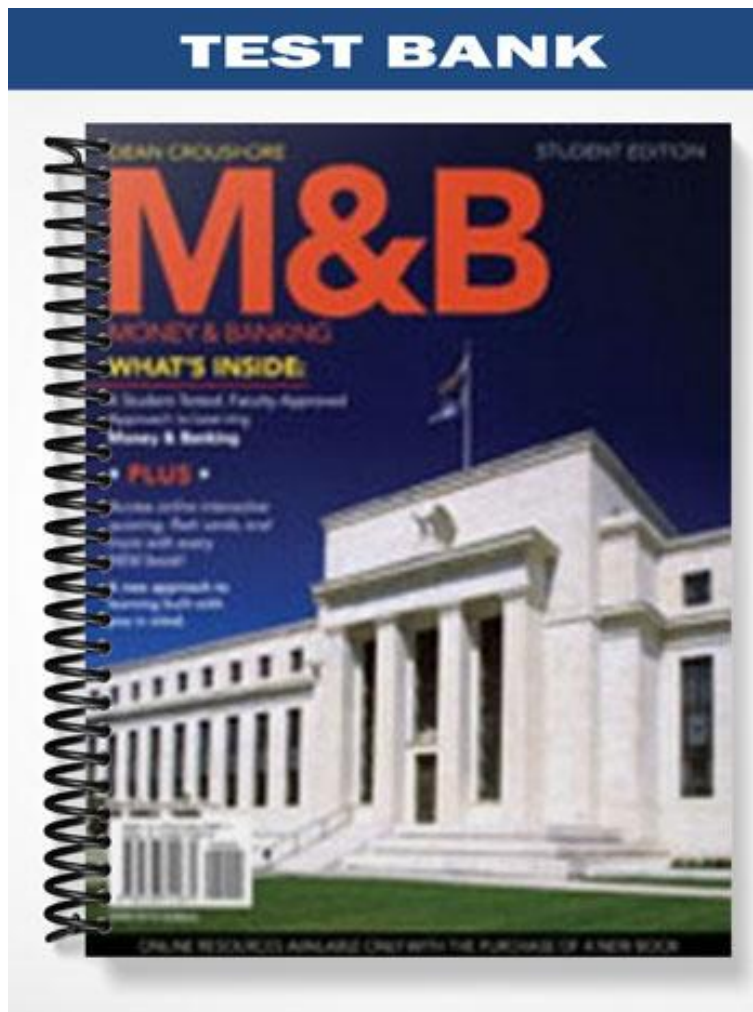ONLINE RESOURCES AVAILABLE ONLY WITH THE PURCHASE OF A NEW BOOK

CHAPTER 2

The Financial System and the Economy

Multiple Choice Questions

Ans: a
Difficulty: Basic
Type: factual

1. The financial system consists of

   a.   all the securities, intermediaries, and markets that exist to match savers and borrowers.
   b.   all the securities that exist to match savers and borrowers.
   c.   all the intermediaries that exist to match savers and borrowers.
   d.   all the markets that exist to match savers and borrowers.

Ans: b
Difficulty: Basic
Type: factual

2. All the securities, intermediaries, and markets that exist to match savers and borrowers are called

   a.   the market.
   b.   the financial system.
   c.   free enterprise.
   d.   the SIM system.

Ans: c
Difficulty: Basic
Type: factual

3. In the financial system, savers transfer funds to borrowers in exchange for

   a.   cash.
   b.   gold.
   c.   financial securities.
   d.   derivative securities.

FINANCIAL SECURITIES

Multiple Choice Questions

Ans: d
Difficulty: Basic
Type: factual

4. A contract whereby a borrower, who seeks to obtain money from someone, promises to compensate the lender in the future is known as

   a.   a warrant.
   b.   an exchange rate.
   c.   a derivative security.
   d.   a financial security.

Ans: a
Difficulty: Basic
Type: factual

5. A contract that promises to pay a given amount of money to the owner of the security at specific dates in the future is known as

   a.   a debt security.
   b.   an equity security.
   c.   stock.
   d.   an option.

Ans: b
Difficulty: Basic
Type: factual

6.   The periodic payments on equity securities are called

 a.   interest payments.
 b.   dividends.
 c.   equity shares.
 d.   stock repurchases.

Ans: a
Difficulty: Basic
Type: factual

7.   The periodic payments on debt securities are called

 a.   interest payments.
 b.   dividends.
 c.   debt swaps.
 d.   subordinations.

Ans: b
Difficulty: Basic
Type: factual

8.   A debt security is

 a.   a contract that makes the owner of a security a part owner of the company that issued the security.
 b.   a contract that promises to pay a given amount of money to the owner of the security at specific dates in the future.
 c.   a contract that makes the owner of a security the sole owner of the company that issued the security.
 d.   a contract that promises to pay an amount of money to the owner of a security at a date in the future to be negotiated.

Ans: b
Difficulty: Basic
Type: factual

9.   A contract that that makes the owner of a security a part owner of the company that issued the security is known as

 a.   a debt security.
 b.   an equity security.
 c.   a bond.
 d.   an option.

Ans: a
Difficulty: Basic
Type: factual

10. An equity security is

 a.   a contract that makes the owner of a security a part owner of the company that issued the security.
 b.   a contract that promises to pay a given amount of money to the owner of the security at specific dates in the future.
 c.   a contract that gives the owner of a security the right to buy stock in the company in the future.
 d.   a contract that promises to pay an amount of money to the owner of a security at a date in the future to be negotiated.

Ans: d
Difficulty: Moderate
Type: factual

11. The amount of debt and equity outstanding in the United States is about _____ times the nation's GDP.

 a.   2
 b.   3
 c.   4
 d.   5

Ans: d
Difficulty: Moderate
Type: factual

12. The ratio of debt to equity in the United States is about

 a.   2.
 b.   2.5.
 c.   3.
 d.   3.5.

Ans: b
Difficulty: Basic
Type: factual

13.   In the United States, the biggest issuers of securities are
- a. households.
- b. business firms.
- c. governments.
- d. financial intermediaries.

Ans: d
Difficulty: Basic
Type: factual

14.   In the United States, the biggest issuers of debt securities are
- a. households.
- b. business firms.
- c. governments.
- d. financial intermediaries.

Ans: b
Difficulty: Basic
Type: factual

15.   In the United States, the biggest issuers of equity securities are
- a. households.
- b. business firms.
- c. governments.
- d. financial intermediaries.

Ans: c
Difficulty: Basic
Type: factual

16.   When a household borrows to buy a home, the resulting security is known as
- a. a discount bond.
- b. a Treasury bill.
- c. mortgage debt.
- d. consumer credit.

Ans: d
Difficulty: Basic
Type: factual

17.   When a household borrows using credit cards and by taking out loans for large purchases (such as automobiles), the resulting security is known as
- a. a discount bond.
- b. a Treasury bill.
- c. mortgage debt.
- d. consumer credit.

Ans: a
Difficulty: Basic
Type: factual

18.   The owner of a financial security is known as
- a. an investor.
- b. a debtor.
- c. a stockholder.
- d. a securitor.

Ans: d
Difficulty: Basic
Type: factual

19.   In the United States, the biggest investors in equity securities are
- a. households.
- b. business firms.
- c. governments.
- d. financial intermediaries.

Ans: d
Difficulty: Basic
Type: factual

20.   In the United States, the biggest investors in debt securities are
- a. households.
- b. business firms.
- c. governments.
- d. financial intermediaries.

Ans: a
Difficulty: Basic
Type: factual

21.   Maturity is
- a. the length of time until borrowed funds are repaid.
- b. what happens to a bond as time passes.
- c. a situation in which equity becomes worthless.
- d. infinite for debt securities.

Ans: b
Difficulty: Basic
Type: factual
	22. The length of time until borrowed funds are repaid is known as
	   a. duration.
	   b. maturity.
	   c. callability.
	   d. the yield curve.

Ans: c
Difficulty: Basic
Type: factual
	23. Principal is
	   a. the amount of interest on a bond.
	   b. the amount of dividends paid each year on a stock.
	   c. the original amount invested in a security.
	   d. infinite for debt securities.

Ans: d
Difficulty: Basic
Type: factual
	24. The original amount invested in a security is known as
	   a. present value.
	   b. future value.
	   c. face value.
	   d. principal.

Ans: a
Difficulty: Basic
Type: factual
	25. Dividends are
	   a. the periodic payments on equity securities.
	   b. the periodic payments on debt securities.
	   c. tax-free payments from insurance companies.
	   d. taxable Social Security payments.

Ans: b
Difficulty: Basic
Type: factual
	26. Interest payments are
	   a. the periodic payments on equity securities.
	   b. the periodic payments on debt securities.
	   c. tax-free payments from insurance companies.
	   d. taxable Social Security payments.

Ans: c
Difficulty: Basic
Type: factual
	27. In the event that a firm goes bankrupt and is liquidated, who is paid off first, second, and third between workers, debt holders, and stockholders?
	   a. (1) debt holders; (2) workers; (3) stockholders
	   b. (1) stockholders; (2) workers; (3) debt holders
	   c. (1) workers; (2) debt holders; (3) stockholders
	   d. (1) workers; (2) stockholders; (3) debt holders

MATCHING BORROWERS WITH LENDERS

Multiple Choice Questions

Ans: b
Difficulty: Moderate
Type: conceptual
	28. Andy keeps his savings in a money market mutual fund, Ben keeps his invested in U.S. savings bonds, and Charlie keeps his in a bank. Who is using direct finance?
	   a. Andy
	   b. Ben
	   c. Charlie
	   d. All three

Ans: a
Difficulty: Moderate
Type: conceptual

29. Andy keeps his savings in a certificate of deposit at a bank, Ben keeps his invested in U.S. savings bonds, and Charlie uses his to buy stock on the New York Stock Exchange. Who is using indirect finance?
    a. Andy
    b. Ben
    c. Charlie
    d. All three

Ans: b
Difficulty: Basic
Type: factual

30. A company that transfers funds from savers to borrowers by receiving funds from savers and investing in securities issued by borrowers is known as a
    a. broker.
    b. financial intermediary.
    c. investment banker.
    d. venture capitalist.

Ans: a
Difficulty: Basic
Type: factual

31. When savers buy securities directly from borrowers, they are using
    a. direct finance.
    b. indirect finance.
    c. a secondary market.
    d. a financial intermediary.

Ans: b
Difficulty: Basic
Type: factual

32. When savers invest through financial intermediaries, they are said to engage in
    a. direct finance.
    b. indirect finance.
    c. a secondary market.
    d. a tertiary market.

Ans: c
Difficulty: Basic
Type: factual

33. Direct finance occurs when
    a. investors buy securities in the secondary market.
    b. investors sell securities in the secondary market.
    c. savers buy securities directly from borrowers.
    d. savers invest through financial intermediaries.

Ans: d
Difficulty: Basic
Type: factual

34. Indirect finance occurs when
    a. investors buy securities in the secondary market.
    b. investors sell securities in the secondary market.
    c. savers buy securities directly from borrowers.
    d. savers invest through financial intermediaries.

Ans: a
Difficulty: Basic
Type: factual

35. A company that transfers funds from savers to borrowers by receiving funds from savers and investing in securities issued by borrowers is known as
    a. a financial intermediary.
    b. a brokerage.
    c. an investment bank.
    d. a secondary market maker.

Ans: b
Difficulty: Basic
Type: factual

36. A financial intermediary is a company that
    a. puts investors who want to sell their securities in touch with other investors who want to buy securities in the secondary market.
    b. transfers funds from savers to borrowers by receiving funds from savers and investing in securities issued by borrowers.
    c. speculates in the stock market.
    d. speculates in the bond market.

Ans: c
Difficulty: Basic
Type: factual
	37. Each of the following is a financial intermediary except a
	   a. commercial bank.
	   b. savings institution.
	   c. stockbroker.
	   d. finance company.

Ans: a
Difficulty: Basic
Type: factual
	38. Commercial banks, savings institutions, and mutual funds are all
	   a. financial intermediaries.
	   b. secondary market organizations.
	   c. owned by the government.
	   d. institutions that people use to engage in direct finance.

Ans: d
Difficulty: Basic
Type: factual
	39. Each of the following is a financial intermediary except a
	   a. credit union.
	   b. life insurance company.
	   c. mutual fund.
	   d. stockbroker.

Ans: b
Difficulty: Basic
Type: factual
	40. Investors who wish to reduce their risk should
	   a. buy stocks of small companies.
	   b. diversify.
	   c. buy stocks of large companies.
	   d. keep large amounts of cash.

Ans: c
Difficulty: Basic
Type: factual
	41. Owning a variety of securities means engaging in
	   a. securitization.
	   b. sterilization.
	   c. diversification.
	   d. standard deviation.

Ans: d
Difficulty: Basic
Type: factual
	42. Diversification means
	   a. not discriminating in credit markets on the basis of a person's race or sex.
	   b. an investor is increasing risk and decreasing expected return.
	   c. selling a security in the secondary market.
	   d. ownership of a variety of securities.

FINANCIAL MARKETS

Multiple Choice Questions

Ans: d
Difficulty: Moderate
Type: conceptual
	43. Joe E. Conomist purchased 100 shares of stock in the IBM corporation in 2008 for $10,000. In 2011 Joe sells his IBM stock to Sally Forth for $15,000. How does this sale of stock in 2011 affect the IBM corporation?
	   a. IBM makes $5000 in profit.
	   b. IBM invests $5000 in capital equipment.
	   c. IBM suffers a loss of $5000.
	   d. IBM is unaffected.

Ans: b
Difficulty: Basic
Type: factual
	44. The market for new securities is known as:
	   a. the stock market.
	   b. the primary market.
	   c. the secondary market.
	   d. the open market.

Ans: d
Difficulty: Moderate
Type: conceptual
	45. Suppose the quantity demanded for a security is
	$$B_D = 150 - 0.1b,$$
	and the quantity supplied of the security is
	$$B_S = 50 + 0.1b,$$
	where b is the price of the security in dollars. The equilibrium price of the security is
	   a. \$50.
	   b. \$125.
	   c. \$250.
	   d. \$500.

Ans: a
Difficulty: Basic
Type: factual
	46. A financial market is
	   a. a place or a mechanism by which borrowers, savers, and financial intermediaries trade.
	   b. an electronic means of transacting.
	   c. a place where people engage in indirect finance.
	   d. a secondary market.

Ans: b
Difficulty: Basic
Type: factual
	47. A place or a mechanism by which borrowers, savers, and financial intermediaries trade is known as
	   a. a primary market.
	   b. a financial market.
	   c. a secondary market.
	   d. a tertiary market.

Ans: c
Difficulty: Basic
Type: factual
	48. The market in which a security is sold from one investor to another is known as
	   a. the stock market.
	   b. the primary market.
	   c. the secondary market.
	   d. the open market.

Ans: d
Difficulty: Basic
Type: factual
	49. The primary market is
	   a. the market in which trades between primary government securities dealers takes place.
	   b. the place where the New York Stock Exchange is located.
	   c. the market for previously owned securities.
	   d. the market for new securities.

Ans: c
Difficulty: Basic
Type: factual
	50. The secondary market is
	   a. the market in which trades between primary government securities dealers takes place.
	   b. the place where the New York Stock Exchange is located.
	   c. the market in which a security is sold from one investor to another.
	   d. the market for new securities.

Ans: a
Difficulty: Basic
Type: factual

51. The U.S. government borrows by auctioning its bonds in the
     a.   primary market.
     b.   stock market.
     c.   secondary market.
     d.   derivative market.

Ans: a
Difficulty: Basic
Type: conceptual

52. An increase in the supply of security A and a decrease in the demand for security B causes the price of security A to _____ and the price of security B to _____.
     a.   fall; fall
     b.   fall; rise
     c.   rise; fall
     d.   rise; rise

Ans: b
Difficulty: Basic
Type: conceptual

53. An increase in the supply of security A and an increase in the demand for security B causes the price of security A to _____ and the price of security B to _____.
     a.   fall; fall
     b.   fall; rise
     c.   rise; fall
     d.   rise; rise

Ans: c
Difficulty: Basic
Type: conceptual

54. A decrease in the supply of security A and a decrease in the demand for security B causes the price of security A to _____ and the price of security B to _____.
     a.   fall; fall
     b.   fall; rise
     c.   rise; fall
     d.   rise; rise

Ans: d
Difficulty: Basic
Type: conceptual

55. A decrease in the supply of security A and an increase in the demand for security B causes the price of security A to _____ and the price of security B to _____.
     a.   fall; fall
     b.   fall; rise
     c.   rise; fall
     d.   rise; rise

Ans: a
Difficulty: Moderate
Type: conceptual

56. Suppose the quantity demanded for a security is
     $$B_D = 150 - 0.1b,$$
     and the quantity supplied of the security is
     $$B_S = 50 + 0.1b,$$
     where b is the price of the security in dollars. The equilibrium quantity of the security is
     a.   100.
     b.   125.
     c.   145.
     d.   500.

Ans: c
Difficulty: Moderate
Type: conceptual

57.   Suppose the quantity demanded for a security is

$$B_D = 150 - 0.1b,$$

and the quantity supplied of the security is

$$B_S = 50 + 0.1b,$$

where b is the price of the security in dollars. Suppose that the supply curve shifts to

$$B_S = 75 + 0.1b.$$

The equilibrium price of the security

a.   rises by $50.
b.   rises by $125.
c.   falls by $125.
d.   falls by $50.

Ans: a
Difficulty: Moderate
Type: conceptual

58.   Suppose the quantity demanded for a security is

$$B_D = 150 - 0.1b,$$

and the quantity supplied of the security is

$$B_S = 50 + 0.1b,$$

where b is the price of the security in dollars. Suppose that the supply curve shifts to

$$B_S = 75 + 0.1b.$$

The equilibrium quantity of the security

a.   rises by 12.5.
b.   rises by 2.5.
c.   falls by 2.5.
d.   falls by 12.5.

Problems/Essays

59.   Suppose the quantity demanded for a security is

$$B_D = 100 - 0.1b,$$

and the quantity supplied of the security is

$$B_S = 50 + 0.1b,$$

where b is the price of the security in dollars.

a.   Calculate the equilibrium price and quantity of the security.

b.   Suppose demand increases by 50, so that $B_D = 150 - 0.1b$. Now, calculate the new equilibrium price and quantity of the security.

Answers:

a.   Set quantity demanded equal to quantity supplied to get $100 - 0.1b = 50 + 0.1b$, so $50 = 0.2b$, so $b = 250$. Plug into either equation to find the equilibrium quantity is 75.

b.   Now set quantity demanded equal to quantity supplied to get $150 - 0.1b = 50 + 0.1b$, so $100 = 0.2b$, so $b = 500$. Plug into either equation to find the equilibrium quantity is 50.

THE FINANCIAL SYSTEM

Multiple Choice Questions

Ans: d
Difficulty: Basic
Type: factual

60. In the 1980s, the United States suffered one of its worst financial crises when _____ began to fail in large numbers.
    a. commercial banks
    b. stock brokers
    c. money market mutual funds
    d. savings-and-loan institutions

Ans: a
Difficulty: Basic
Type: factual

61. In the Asian crisis, which began in 1997,
    a. investors began to pull their financial investments out of Asia with urgency.
    b. large banks from Asia began purchasing large American banks, threatening the health of the U.S. financial system.
    c. mutual funds in Asia began to fail in large numbers.
    d. savings-and-loan institutions in Asia began to fail in large numbers.

Ans: b
Difficulty: Basic
Type: factual

62. One lesson learned from the financial crisis of 2008 was that
    a. government regulators need to respond slowly when financial practices threaten the economy.
    b. unregulated financial firms need to be prevented from growing so large that their failure would severely damage the economy.
    c. the ease of owning a home has no relationship to the efficiency of the financial system.
    d. unregulated financial firms need to be prevented from growing so small that their success would have no or little effect on the economy.

APPLICATION TO EVERYDAY LIFE: WHAT DO INVESTORS CARE ABOUT?

Multiple Choice Questions

Ans: c
Difficulty: Moderate
Type: conceptual

63. Suppose you are an investor with a choice between three investments that are identical in every way except in terms of their rates of return and taxability. Which investment provides the highest after-tax return?

    Investment A: interest rate 10 percent, tax rate 40 percent of interest income.

    Investment B: interest rate 8 percent, tax rate 25 percent of interest income.

    Investment C: interest rate 6.5 percent, tax rate 0 percent.

    a. Investment A.
    b. Investment B.
    c. Investment C.
    d. Investments A and B have the same after-tax return, which is greater than that of investment C.

Ans: a
Difficulty: Challenging
Type: conceptual

64. Consider the following four debt securities, which are identical in every characteristic except as noted:

W: A corporate bond rated AAA

X: A corporate bond rate BBB

Y: A corporate bond rated AAA with a shorter time to maturity than bonds W and X

Z: A corporate bond rated AAA with the same time to maturity as bond Y that trades in a more liquid market than bonds W, X, or Y

Which of the following is the most likely order of the interest rates (yields to maturity) of the bonds from highest to lowest?

a.   X, W, Y, Z
b.   W, X, Z, Y
c.   X, Y, Z, W
d.   X, Z, W, Y

Ans: b
Difficulty: Basic
Type: factual

65. An investor calculating the standard deviation of different investments is measuring the _____ of alternative investment portfolios.

a.   expected return
b.   risk
c.   taxation
d.   liquidity

Ans: d
Difficulty: Moderate
Type: conceptual

66. Suppose you are an investor with a choice between three securities that are identical in every way except in terms of their rates of return and risk. Which investment provides the highest expected return?

Investment A: Total return = 10 percent with probability 50 percent
Total return = 20 percent with probability 50 percent

Investment B: Total return = 12 percent with probability 50 percent
Total return = 18 percent with probability 50 percent

Investment C: Total return = 5 percent with probability 60 percent
Total return = 25 percent with probability 40 percent

a.   Investment A
b.   Investment B
c.   Investment C
d.   Investments A and B have the same expected return, which is greater than that of investment C.

Ans: b
Difficulty: Moderate
Type: conceptual

67. Suppose you are an investor with a choice between three securities that are identical in every way except in terms of their rates of return and risk. Which security has the least risk? Note: You can answer this question intuitively, without calculating the standard deviation. However, if you want to calculate the standard deviation, the equation is:

Standard deviation = S =

$$\left\{ p_1 \left(X_1 - E \right)^2 + p_2 \left(X_2 - E \right)^2 + ... + p_N \left(X_N - E \right)^2 \right\}^{\frac{1}{2}}.$$

Investment A: total return = 10 percent with probability 50 percent
total return = 20 percent with probability 50 percent

Investment B: total return = 12 percent with probability 50 percent
total return = 18 percent with probability 50 percent

Investment C: total return = 5 percent with probability 60 percent
total return = 25 percent with probability 40 percent

a.   Investment A
b.   Investment B
c.   Investment C
d.   Investments A and B have the same risk, which is less than that of investment C.

Ans: c
Difficulty: Basic
Type: factual

68. A nonmarketable security is one that

a.   is not widely advertised.
b.   has a present value of zero.
c.   cannot be resold in a secondary market.
d.   has only a current yield and not a capital-gains yield.

Ans: a
Difficulty: Moderate
Type: conceptual

69. Consider these three investments, where expected return is the expected value of the total return and risk is measured by the standard deviation, and the investments are identical in every way except for their expected return and risk:

Investment A: expected return = 2 percent, risk = 5 percent

Investment B: expected return = 5 percent, risk = 4 percent

Investment C: expected return = 14 percent, risk = 20 percent

If a risk-averse investor can only buy one of the three investments and compares each investment with the other two, consider whether there is one investment that the investor would never purchase. A risk-averse investor would never purchase

   a.   investment A, because its expected return is lower than investment B and its risk is higher.
   b.   investment B, because its expected return is so much lower than investment C.
   c.   investment C, because its risk exceeds its expected return.
   d.   investments A and B, because the expected return to investment C is so much higher.

Ans: b
Difficulty: Basic
Type: factual

70. Risk that cannot be eliminated by diversification is
   a.   idiosyncratic risk.
   b.   market risk.
   c.   default risk.
   d.   interest-rate risk.

Ans: d
Difficulty: Basic
Type: factual

71. Over the last fifty years, the risk spread between Aaa bonds and Baa bonds (the interest rate on Baa bonds minus the interest rate on Aaa bonds) became negative
   a.   only in the mid-1960s.
   b.   only in 1998.
   c.   for most of the last twenty years.
   d.   never.

Ans: d
Difficulty: Moderate
Type: conceptual

72. If a stock's price is $20 at the beginning of a year and $17 at the end of the year, and it pays a dividend of $2 during the year, then the stock's current yield is _____ percent.
   a.   −15
   b.   −5
   c.   5
   d.   10

Ans: a
Difficulty: Moderate
Type: conceptual

73. If a stock's price is $20 at the beginning of a year and $17 at the end of the year, and it pays a dividend of $2 during the year, then the stock's capital-gains yield is _____ percent.
   a.   −15
   b.   −5
   c.   5
   d.   15

Ans: b Difficulty: Moderate Type: conceptual	74. If a stock's price is $20 at the beginning of a year and $17 at the end of the year, and it pays a dividend of $2 during the year, then the stock's return is _____ percent. a. −15 b. −5 c. 5 d. 10
Ans: c Difficulty: Moderate Type: conceptual	75. A stock's price is $20 at the beginning of a year. There is a 25 percent chance that the price will be $17 at the end of the year, and a 75 percent chance that the price will be $25 at the end of the year. The stock will pay a dividend of $3 during the year. The expected return on the stock is _____ percent. a. 10 b. 20 c. 30 d. 40
Ans: a Difficulty: Moderate Type: conceptual	76. The probabilities of different returns on a stock over the year are: **Probability Return** 10% −5% 15% 0% 20% 5% 30% 10% 25% 20% The expected return on the stock is _____ percent. a. 8.5 b. 9.0 c. 9.5 d. 10.0
Ans: a Difficulty: Moderate Type: conceptual	77. You buy a bond for $1000 today that promises interest of $50 in one year plus the return of your principal. However, the probability that the company will default and not pay you either interest nor repay your principal is 1 percent. The expected return on the bond is _____ percent. a. 3.95 b. 4.00 c. 4.95 d. 5.00
Ans: d Difficulty: Moderate Type: conceptual	78. A stock's price is $20 at the beginning of a year. There is a 25 percent chance that the price will be $17 at the end of the year, and a 75 percent chance that the price will be $25 at the end of the year. The stock will pay a dividend of $3 during the year. The standard deviation of the return on the stock is _____ percent (rounded to the nearest percentage point). a. 10 b. 12 c. 15 d. 17

Ans: b
Difficulty: Moderate
Type: conceptual

79. The probabilities of different returns on a stock over the year are:

Probability   Return

10%   -5%

15%   0%

20%   5%

30%   10%

25%   20%

The standard deviation of the return on the stock is about _____ percent.

a.   5
b.   8
c.   11
d.   14

Ans: a
Difficulty: Basic
Type: factual

80. The ease with which you can buy or sell a security in the secondary market when you want to without incurring significant costs is known as

a.   liquidity.
b.   risk.
c.   secondary marketization.
d.   secondary market penetration.

Ans: d
Difficulty: Basic
Type: factual

81. Liquidity in a financial market refers to

a.   the amount of money that sellers have committed to buying securities.
b.   the difference in the times to maturity of two different debt securities multiplied by the difference in returns to the securities.
c.   the difference in the times to maturity of two different debt securities.
d.   how easy it is to buy or sell a security in the secondary market when you want to without incurring significant costs.

Ans: b
Difficulty: Basic
Type: factual

82. A U.S. government savings bond is an example of a

a.   marketable security.
b.   nonmarketable security.
c.   secondary security.
d.   primary security.

Ans: a
Difficulty: Basic
Type: factual

83. Risk that can be eliminated by diversification is

a.   idiosyncratic risk.
b.   market risk.
c.   default risk.
d.   interest-rate risk.

Ans: b
Difficulty: Basic
Type: factual

84. Risk that cannot be eliminated by diversification is

a.   unsystematic risk.
b.   systematic risk.
c.   default risk.
d.   interest-rate risk.

Ans: a
Difficulty: Basic
Type: factual

85. Risk that can be eliminated by diversification is

a.   unsystematic risk.
b.   systematic risk.
c.   default risk.
d.   interest-rate risk.

Problems/Essays

86. Consider three alternative bonds that you might invest in, each of which matures in one year. The following table shows the probability that you will receive each possible return. For example, if you buy bond A, the probability is 90 percent that your return will be 20 percent and the probability is 10 percent that your return will be –100 percent (in other words, you lose the entire amount invested).

Bond	Probability	Return
Bond A	90%	20%
	10%	–100%
Bond B	75%	40%
	25%	–40%
Bond C	60%	10%
	40%	–10%

a. Calculate the expected return for all three bonds in percentage terms.

b. The standard deviations of the returns on these bonds are: Bond A, 36.0 percent; Bond B, 34.6 percent; Bond C, 9.8 percent. If you are extremely risk averse, which of the three bonds would you buy? Why?

c. Would a risk-averse investor ever buy Bond A instead of one of the other bonds? Why or why not?

Explain and show all your work. In your calculations, you may round after three significant digits.

Answers:

a. $E(A) = (0.9 \times 0.2) + [0.1 \times (-1.0)] = 0.08 = 8\%$

$E(B) = (0.75 \times 0.4) + [0.25 \times (-0.4)] = 0.2 = 20\%$

$E(C) = (0.6 \times 0.1) + [0.4 \times (-0.1)] = 0.02 = 2\%$

b. You would buy bond C, which has the lowest risk, even though the expected return is very low.

c. You would never buy bond A because it is dominated by bond B; B has a higher expected return and a lower standard deviation

87. Suppose a discount bond costs $5000 today and pays off some amount b in one year. Suppose that b is uncertain according to the following table of probabilities:

b:	$5000	$5500	$6000	$6500	$7000
Probability:	0.1	0.2	0.3	0.2	0.2

a. Calculate the return (in percent) for each value of b. (Note: you may just calculate the total return and not worry about how this is split up between current yield and capital-gains yield.)

b. Calculate the expected return.

c. Suppose an investor has a choice between buying this security or purchasing a different security that also costs $5000 today, but pays off $5500 with certainty in one year. How is an investor's choice of which security to purchase related to her degree of risk aversion?

Answers:

a.   The returns are found by: return = $[(b - \$5000)/\$5000] \times 100\%$

b	return
$5000	0%
$5500	10%
$6000	20%
$6500	30%
$7000	40%

b. $E = (0.1 \times 0\%) + (0.2 \times 10\%) + (0.3 \times 20\%) + (0.2 \times 30\%) + (0.2 \times 40\%)$

       $= 22\%$

c.   The trade-off is between a certain return of 10 percent versus a risky return of 22 percent. Which one the investor would choose depends on her degree of risk aversion; the more risk averse she is, the more likely she is to pick the safe asset instead of the risky one. As the degree of risk aversion declines, she is more likely to pick the risky asset.

88.   Suppose you are an investor with a choice between three investments in debt securities that are identical in every way except in terms of their interest rates and taxability.

       Investment A: Interest rate 10 percent, tax rate 40 percent of interest income

       Investment B: Interest rate 8 percent, tax rate 30 percent of interest income

       Investment C: Interest rate 6.5 percent, tax rate 0 percent

       Which investment provides the highest after-tax return? Show your work.

       Answer:

       After-tax return = $(1 - t) \times$ interest rate.

       A: $(1 - 0.40) \times 10\% = 6.0\%$

       B: $(1 - 0.30) \times 8\% = 5.6\%$

       C: $(1 - 0) \times 6.5\% = 6.5\%$

       Investment C has the highest after-tax return.

89.   Consider the following four debt securities, which are identical in every characteristic except as noted:

       W: A corporate bond rated AAA

       X: A corporate bond rate BBB

       Y: A corporate bond rated AAA with a shorter time to maturity than bonds W and X

       Z: A corporate bond rated AAA with the same time to maturity as bond Y that trades in a more liquid market than bonds W, X, or Y

       List the bonds in the most likely order of the interest rates (yields to maturity) of the bonds from highest to lowest. Explain your work.

       Answer:

       X, W, Y, Z
       Reasoning: W is rated AAA, X is BBB, so X must have a higher interest rate than W to compensate for the additional default risk; so far: X, W. Y is rated AAA and has a shorter time to maturity than W and X, so it will have a lower interest rate than W because of shorter time to maturity and will have a lower interest rate than X because of less default risk and a shorter time to maturity; so far: X, W, Y. Z trades in a more liquid market than W, X, or Y and has equal or less risk than them, and an equal or less time to maturity, all of which give it the lowest interest rate. Final order: X, W, Y, Z.

90.   Suppose you are an investor with a choice between three securities that are identical in every way except in terms of their rates of return and risk.

Investment A: Total return = 10 percent with probability 50 percent
Total return = 20 percent with probability 50 percent

Investment B: Total return = 12 percent with probability 40 percent
Total return = 18 percent with probability 60 percent

Investment C: Total return = 5 percent with probability 60 percent
Total return = 25 percent with probability 40 percent

a.   Which investment provides the highest expected return? Show your work by calculating the expected return of all three investments.

b.   Calculate the standard deviation of all three investments.

c.   What type of investor might prefer investment A? Who might prefer investment B?

Answers:

a.   A: $(0.5 \times 10\%) + (0.5 \times 20\%) = 15.0\%$

B: $(0.4 \times 12\%) + (0.6 \times 18\%) = 15.6\%$

C: $(0.6 \times 5\%) + (0.4 \times 25\%) = 13.0\%$

Investment B has the higher expected return.

b.   A: $\{[0.5 \times (0.1 - 0.15)^2] + [0.5 \times (0.2 - 0.15)^2]\}^{1/2} = 5.0\%$

B: $\{[0.4 \times (0.12 - 0.156)^2] + [0.6 \times (0.18 - 0.156)^2]\}^{1/2} = 2.9\%$

C: $\{[0.6 \times (0.05 - 0.13)^2] + [0.4 \times (0.25 - 0.13)^2]\}^{1/2} = 9.8\%$

c.   No risk-averse investor would ever prefer investment A because it has a lower expected return and higher risk than investment B. Similarly, no risk-averse investor would ever prefer investment C. Given these choices, all risk-averse investors would choose investment B.

91.   Suppose you are an investor with a choice between three securities that are identical in every way except in terms of their rates of return and risk.

Investment A: Total return = 10 percent with probability 50 percent
Total return = 20 percent with probability 50 percent

Investment B: Total return = 12 percent with probability 40 percent
Total return = 14 percent with probability 60 percent

Investment C: Total return = 10 percent with probability 60 percent
Total return = 30 percent with probability 40 percent

a. Which investment provides the highest expected return? Show your work by calculating the expected return of all three investments.

b. Calculate the standard deviation of all three investments.

c. What type of investor might prefer investment A? Who might prefer investment B?

Answers:

a. A: $(0.5 \times 10\%) + (0.5 \times 20\%) = 15.0\%$

B: $(0.4 \times 12\%) + (0.6 \times 14\%) = 13.2\%$

C: $(0.6 \times 10\%) + (0.4 \times 30\%) = 18.0\%$

Investment C has the highest expected return.

b. A: $\{[0.5 \times (0.1 - 0.15)^2] + [0.5 \times (0.2 - 0.15)^2]\}^{1/2} = 5.0\%$

B: $\{[0.4 \times (0.12 - 0.132)^2] + [0.6 \times (0.14 - 0.132)^2]\}^{1/2} = 1.0\%$

C: $\{[0.6 \times (0.10 - 0.18)^2] + [0.4 \times (0.30 - 0.18)^2]\}^{1/2} = 9.8\%$

c. A fairly risk-averse investor would prefer investment B because it has the lowest risk, but also the lowest expected return. A moderately risk-averse investor would prefer investment A, because its risk and return are in the middle of A and C. An investor who is not very risk averse might prefer investment C, which has the highest expected return but also the highest risk.

92. Suppose that the price of a stock is $50 at the beginning of a year and $53 at the end of the year, and it pays a dividend of $2 during the year.

a. What is the stock's current yield?

b. What is the stock's capital-gains yield?

c. What is the stock's return?

Answers:

a. Current yield = $2/$50 = .04 =4%.

b. Capital-gains yield = ($53 - $50)/$50 = .06 = 6%

c. Return = current yield + capital-gains yield = 4% + 6% = 10%

93. A stock's price is $20 at the beginning of a year. There is a 25 percent chance that the price will be $17 at the end of the year, and a 75 percent chance that the price will be $25 at the end of the year. The stock will pay a dividend of $3 during the year.

a. Calculate the stock's expected return.

b. Calculate the standard deviation of the stock's return.

Answers:

a. Expected return = [0.25 × ($17 + $3 - $20)/$20] + [0.75 × ($25 + $3 - $20)/$20]

= $(0.25 \times 0) + (0.75 \times 0.4) = 0.3 = 30\%$

b. Standard deviation = $\{[0.25 \times (0 - 0.3)^2] + [0.75 \times (0.4 - 0.3)^2]\}^{1/2} = 17.3\%$

94.   The probabilities of different returns on a stock over the year are:

Probability	Return
10%	−5%
15%	0%
20%	5%
30%	10%
25%	20%

a.   Calculate the stock's expected return.

b.   Calculate the stock's standard deviation.

Answers:

a.   Expected return = $(0.10 \times -5\%) + (0.15 \times 0\%) + (0.20 \times 5\%) + (0.30 \times 10\%) + (0.25 \times 20\%) = 8.5\%$

b.   Standard deviation = $\{[0.10 \times (-0.05 - 0.085)^2] + \{[0.15 \times (0.00 - 0.085)^2] + \{[0.20 \times (0.05 - 0.085)^2]$
       $+ \{[0.30 \times (0.10 - 0.085)^2] + \{[0.25 \times (0.20 - 0.085)^2] = 8.1\%$