Problem Set for Chapter 14 (Multiple choices)

1. In which of the following instances is the present value of the future payment the largest?
   a. You will receive $1,000 in 5 years and the annual interest rate is 5 percent.
   b. You will receive $1,000 in 10 years and the annual interest rate is 3 percent.
   c. You will receive $2,000 in 10 years and the annual interest rate is 10 percent.
   d. You will receive $2,400 in 15 years and the annual interest rate is 8 percent.

   ANS: A

2. What is the future value of $450 at an interest rate of 9 percent two years from today?
   a. $534.65
   b. $546.35
   c. $565.18
   d. $574.13

   ANS: A

Hector puts $150 into an account when the interest rate is 4 percent. Later he checks his balance and finds he has about $168.73. How long did Hector wait to check his balance?
   a. 3 years
   b. 3.5 years
   c. 4 years
   d. 4.5 years

   ANS: A

3. Your accountant tells you that if you can continue to earn the current interest rate on your balance of $500 for ten years, you will have about $983.58. If your accountant is correct, what is the current rate of interest?
   a. 5 percent
   b. 6 percent
   c. 7 percent
   d. 8 percent

   ANS: C

4. Brittany wants to have about $500,000 when she retires in 10 years. She has $200,000 to deposit now. At which of the following interest rates would her deposit come closest to $500,000 after 10 years?
   a. 9.6 percent
   b. 9.8 percent
   c. 10 percent
   d. 10.2 percent

   ANS: A
5. You have been promised a payment of $400 in the future. In which of the following cases is the present value of this payment the lowest?
   a. You receive the payment 4 years from now and the interest rate is 4 percent.
   b. You receive the payment 4 years from now and the interest rate is 5 percent.
   c. You receive the payment 5 years from now and the interest rate is 4 percent.
   d. You receive the payment 5 years from now and the interest rate is 5 percent.
ANS: D

6. Which, if any, of the present values below are computed correctly?
   a. A payment of $100 to be received one year from today, with a 2 percent interest rate, has a present value of $98.81.
   b. A payment of $200 to be received two years from today, with a 3 percent interest rate, has a present value of $188.52.
   c. A payment of $300 to be received three years from today, with a 4 percent interest rate, has a present value of $234.34.
   d. None of the above are correct to the nearest cent.
ANS: B

7. Happy Trails, a bicycle rental company, is considering purchasing three additional bicycles. Each bicycle would cost them $249.66. At the end of the first year the increase to their revenues would be $140 per bicycle. At the end of the second year the increase to their revenues again would be $140 per bicycle. Thereafter, there are no increases to their revenues. At which of the following interest rates is the sum of the present values of the additional revenues closest to the price of a bicycle?
   a. 5 percent
   b. 6 percent
   c. 7 percent
   d. 8 percent
ANS: D

8. Markovich Corporation is considering building a new plant. It will cost $1 million today to build it and it will generate revenues of $1.121 million three years from today. Of the interest rates below, which is the highest interest rate at which Markovich still would be willing to build the plant?
   a. 3 percent
   b. 3.5 percent
   c. 4 percent
   d. 4.5 percent
ANS: B

9. You receive $500 today which you plan to save for two years. Also, in two years you will be given another $500. If the interest rate is 5 percent, what is the present value of the payment of $500 today and the $500 in two years?
   a. $500(1.05)^2 + $500/(1.05)^2
   b. $500(1.05)^2 + $500
   c. $500 + $500/(1.05)^2
   d. $500 + $500
ANS: C
10. The present value of a future payment to be received in three years is $1,000. If the interest rate is 5%, what is the amount that will be paid in three years?
   a. $1,150.00
   b. $1,157.63
   c. $1,215.51
   d. $1,250.00
   ANS: B

11. The figure shows a utility function.

Which distance along the vertical axis represents the marginal utility of an increase in wealth from $600 to $800?
   a. the distance between the origin and point B
   b. the distance between the origin and point C
   c. the distance between point A and point C
   d. the distance between point B and point C
   ANS: D
12. The figure shows a utility function for Mary Ann.

From the appearance of the utility function, we know that
a. Mary Ann is risk averse.
   b. Mary Ann gains less satisfaction when her wealth increases by $X$ dollars than she loses in
      satisfaction when her wealth decreases by $X$ dollars.
   c. the property of diminishing marginal utility applies to Mary Ann.
   d. All of the above are correct.

ANS: D

Figure 1 The figure shows a utility function for Dexter.

13. Refer to Figure 1. In what way(s) does the graph differ from the usual case?
   a. The utility function shown here is upward-sloping, whereas in the usual case the utility function is downward-sloping.
   b. The utility function shown here is bowed downward (convex), whereas in the usual case the utility function is bowed upward (concave).
   c. On the graph shown here, wealth is measured along the horizontal axis, whereas in the usual case saving is measured along the horizontal axis.
   d. On the graph shown here, utility is measured along the vertical axis, whereas in the usual case satisfaction is measured along the vertical axis.

ANS: B
14. **Refer to Figure 1.** From the appearance of the graph, we know that
   a. Dexter’s level of satisfaction increases by more when his wealth increases from $1,001 to $1,002 than it does when his wealth increases from $1,000 to $1,001.
   b. Dexter’s level of satisfaction increases by less when his wealth increases from $1,001 to $1,002 than it does when his wealth increases from $1,000 to $1,001.
   c. Dexter’s level of satisfaction increases by the same amount when his wealth increases from $1,001 to $1,002 as it does when his wealth increases from $1,000 to $1,001.
   d. None of the above answers can be inferred from the appearance of the utility function.
   
   **ANS:** A

15. If Robert is risk-averse, then he will always
   a. choose *not* to play a game where he has a 50 percent chance of winning $1 and a 50 percent chance of losing $1.
   b. choose *not* to play a game where he has a 75 percent chance of winning $1 and a 25 percent chance of losing $1.
   c. choose to play a game where he has a 52 percent chance of winning $1 and a 48 percent chance of losing $1.
   d. All of the above are correct.
   
   **ANS:** A

16. Roger determines that if Aim Corporation has high revenues, then Zest Corporation will have low revenues, and that if Aim Corporation has low revenues, Zest Corporation will have high revenues. He buys stock in both corporations.
   a. He has reduced firm-specific risk but not market risk.
   b. He has reduced market risk, but not firm-specific risk.
   c. He had reduce both firm-specific risk and market risk.
   d. He has reduced neither firm-specific risk nor market risk.
   
   **ANS:** A

17. Which of the following is a source of market risk?
   a. Holding stocks in many companies carries the risk of a reduced average return.
   b. Real GDP varies over time and sales and profits move with real GDP.
   c. When a paper producer has declining sales, it is likely that so will other paper producers.
   d. If stockholders become aggravated with the way a CEO runs a company, the price of that company’s stock might fall in the stock market.
   
   **ANS:** B

18. The idea of insurance
   a. would not appeal to a risk-averse person.
   b. is, other things the same, to reduce the probability of a fire, accident, or death.
   c. is to share risk.
   d. is to provide a sure thing, not a gamble.
   
   **ANS:** C
19. A bank might make mortgages to people in different regions of the country. By doing so
a. the bank reduces the risk it faces from falling house prices in its region and falling prices
   in all regions.
b. the bank reduces the risk it faces of falling house prices in its region but not from falling
   prices in all regions.
c. the bank reduces the risk it faces of falling house prices in all regions, but not the risk it
   faces from falling house prices in its regions.
d. the bank reduces neither the risk it faces from falling house prices in its region nor falling
   prices in all regions.
ANS: B

20. If the efficient markets hypothesis is correct, then
a. the number of shares of stock offered for sale exceeds the number of shares of stock that
   people want to buy.
b. the stock market is informationally efficient.
c. stock prices never follow a random walk.
d. All of the above are correct.
ANS: B

21. According to the efficient market hypothesis, which of the following statements is not
    correct?
a. Stock market prices tend to rise today if they rose yesterday.
b. As judged by the typical person in the market, all stocks are fairly valued all the time.
c. At the market price, the number of shares being offered for sale matches the number of
   shares people want to buy.
d. All of the above statements are incorrect.
ANS: A