Interactive Questions

3-1. A primary asset is an initial offering sold by a business, or government, to raise funds.
   A) True
   B) False

3-2. Money market instruments mature in one year or less.
   A) True
   B) False

3-3. Notes and bonds are generic terms for equity income securities.
   A) True
   B) False

3-4. Financial assets can be further subdivided into primary assets (securities originally sold by
   businesses and government to raise money) and derivative assets (assets that derive their value from
   other assets).
   A) True
   B) False

3-5. The potential gains from including fixed income securities in a portfolio are:
   A) fixed payments and protection against inflation.
   B) risk free and return of capital.
   C) risk free and fixed payments.
   D) fixed payments and return of capital at maturity.

3-6. Usually, for money market instruments, the ________ is quoted in the financial press.
   A) price
   B) interest rate
   C) market converted amount
   D) They are not quoted.

3-7. Current yield is
   A) annual coupon divided by interest rate
   B) annual coupon divided by current price
   C) current price plus annual coupon
   D) current price minus annual coupon

3-8. Dividends on common stocks are usually paid on a(n) ____________ basis. A) annual
   B) semi-annual
   C) quarterly
   D) monthly
3-9. A call option is associated with
A) buying assets.
B) margin accounts
C) selling assets.
D) calling loans.

3-10. Suppose you buy newly issued four-year Treasury notes with a face value of $500,000 having a 6% coupon rate. How much in total payments will you receive by the end of year four?
A) $500,000
B) $620,000
C) $15,000
D) $250,000

Chapter Review Problems and Self-Test

1. Corporate Bond Quotes In Figure 3.1, locate the AT&T bond that matures in the year 2029. What is the coupon rate on this issue? Suppose you purchase $100,000 in face value. How much will this cost? Assuming semiannual payments, what will you receive in coupon payments? Verify the reported current yield.

2. Call Options In Figure 3.4, locate the AOL TW February 15 call option. If you buy 10 contracts, how much will you pay? Suppose that in February, just as the option is about to expire, AOL TW is selling for $20 per share. What are your options worth? What is your net profit?

Answers to Self-Test Problems

1. Based on Figure 3.1, the AT&T issue that matures in 2029 (shown as 29) has a 6.5 percent coupon rate. The price, as a percentage of face value, is 87.88, or 87.88 percent. If you buy $100,000 in face value, you would thus pay $87,880. You will receive 6.5 percent of $100,000, or $6,500, in coupon payments every year, paid in two $3,250 semiannual installments. Finally, the current yield is the coupon rate divided by the price, or 6.5/87.88 7.4 percent, the number shown.

2. From Figure 3.4, the February 15 call premium is .95, or $.95. Because one contract involves 100 shares, the cost of a contract is $95, and 10 contacts would cost $950. In February, if AOL TW is selling for $20, then you have the right to buy 10 contracts x 100 shares = 1,000 shares at $20. Your contracts are thus worth $20 – $15 = $5 per share, or $5,000 total. Since they cost you $950, your net profit is $4,050.

Test Your Investment Quotient IQ

1. Money Market Securities Which of the following is not a common characteristic of money market securities?
a. Sold on a discount basis.
b. Mature in less than one year.
c. Most important risk is default risk.
d. All of the above are characteristics.
2. Money Market Securities  Which of the following money market securities is the most liquid?
   b. Bank certificates of deposit.
   c. Corporate money market debt.
   d. Municipality money market debt.

3. Options  A European option can be exercised
   a. Only after American options.
   b. Anytime up to and including the expiration date.
   c. Only on the day before the expiration date.
   d. Only on a European exchange.

4. Fixed-Income Securities  Your friend told you she just received her semiannual coupon payment on a U.S. Treasury note with a $100,000 face value that pays a 6 percent annual coupon. How much money did she receive from this coupon payment?
   a. $3,000
   b. $6,000
   c. $30,000
   d. $60,000

5. Common Stock- A corporation with common stock issued to the public pays dividends
   a. At the discretion of management, who are elected by the shareholders.
   b. At the discretion of shareholders, since they own the corporation.
   c. At the discretion of the company’s board of directors, who are elected by shareholders.
   d. At the discretion of the company’s board of directors, who are appointed by management.

6. Futures Contracts  You buy (go long) five copper futures contracts at 100 cents per pound, where the contract size is 25,000 pounds. At contract maturity, copper is selling for 102 cents per pound. What is your profit (+) or loss (—) on the transaction?
   a. -$2,500
   b. + $2,500
   c. -$25,000
   d. + $25,000

7. Futures Contracts  You sell (go short) 10 gold futures contracts at $400 per ounce, where the contract size is 100 ounces. At contract maturity, gold is selling for $410 per ounce. What is your profit (+) or loss (—) on the transaction?
   a. -$1,000
   b. +$1,000
   c. -$10,000
   d. +$10,000

8. Option Contracts  You buy 100 CJC call option contracts with a strike price of 95 at a quoted price of $1. At option expiration, CJC sells for $97. What is your net profit on the transaction?
   a. $2,000
   b. $5,000
   c. $10,000
   d. $20,000

9. Option Contracts  You buy 100 CJC put option contracts with a strike price of 92 at a quoted price of $8. At option expiration, CJC sells for $83.80. What is your net profit on the transaction?
   a. $200
   b. $1,000
   c. $2,000
   d. $10,000
10. **CFA Short Sales**  Which of the following statements about short selling is true?
   
a. A short position may be hedged by writing call options.
   
b. A short position may be hedged by purchasing put options.
   
c. Short sellers may be subject to margin calls if the stock price increases.
   
d. Stocks that pay large dividends should be sold short before the ex-dividend date and bought afterward to take advantage of the large price declines in a short time period.

**Concept Questions**

1. **Money Market Instruments**  What are the distinguishing features of a money market instrument?

2. **Preferred Stock**  Why is preferred stock “preferred”?

3. **WSJ Stock Quotes**  What is the PE ratio reported for stocks in *The Wall Street Journal*? In particular, how is it computed?

4. **Yields**  The current yield on a bond is very similar to what number reported for common and preferred stocks?

5. **Volume Quotations**  Explain how volume is quoted for stocks, corporate bonds, futures, and options.

6. **Futures Contracts**  Changes in what price lead to gains and/or losses in futures contracts?

7. **Futures Contracts**  What is the open interest on a futures contract? What do you think will usually happen to open interest as maturity approaches?

8. **Futures versus Options**  What is the difference between a futures contract and an option contract? Do the buyer of a futures contract and the buyer of an option contract have the same rights? What about the seller?

9. **Asset Types**  What is the distinction between a real asset and a financial asset? What are the two basic types of financial assets, and what does each represent?

10. **Puts versus Calls**  Suppose a share of stock is selling for $100. A put and a call are offered, both with $100 strike prices and nine months to maturity. Intuitively, which do you think is more valuable?

**Questions and Problems**

1. **Stock Quotations**  You found the following stock quote for DRK Enterprises, Inc., at your favorite website. What was the closing price for this stock yesterday? How many round lots of stock were traded yesterday?

<table>
<thead>
<tr>
<th>YTD % Chg</th>
<th>52 Weeks Hi</th>
<th>Lo</th>
<th>Stock</th>
<th>Sym</th>
<th>Div</th>
<th>Yld %</th>
<th>PE</th>
<th>Vol</th>
<th>IOOs</th>
<th>Last</th>
<th>Net % Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>-8.1</td>
<td>65</td>
<td>28.25</td>
<td>DRK</td>
<td>DRK</td>
<td>1.40</td>
<td>4.20</td>
<td>12</td>
<td>8153</td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. **Stock Quotations**  In the previous problem, assume the company has 25 million shares of stock outstanding. What was net income for the most recent four quarters?
3. Dividend Yields  The following stock quote for Ehrhardt-Daves Corporation (EDC) appeared on an online quote server:

<table>
<thead>
<tr>
<th>YTD % Chg</th>
<th>52 Weeks Hi</th>
<th>52 Weeks Lo</th>
<th>Stock</th>
<th>Sym</th>
<th>Div</th>
<th>Yld %</th>
<th>PE</th>
<th>Vol 100s</th>
<th>Last Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2</td>
<td>84.30</td>
<td>52.05</td>
<td>EDC</td>
<td>EDC</td>
<td>??</td>
<td>4.</td>
<td>16</td>
<td>295</td>
<td>81.05</td>
</tr>
</tbody>
</table>

What was the last quarterly dividend paid by EDC?

4. Earnings per Share  In the previous problem, what is the earnings per share (EPS) for the company?

5. Bonds  You buy $500,000 in face value of bonds that mature in 10 years and carry a 7.5 percent coupon rate. If the coupon payments are made semiannually, how much will you receive on the next coupon payment date? How much will you receive when the bonds mature?

6. Futures Profits  The contract size for platinum futures is 50 troy ounces. Suppose you need 800 troy ounces of platinum and the current futures price is $750 per ounce. How many contracts do you need to purchase? How much will you pay for your platinum? What is your dollar profit if platinum sells for $785 a troy ounce when the futures contract expires? What if the price is $730 at expiration?

7. Option Profits  You purchase 10 call option contracts with a strike price of $55 and a premium of $3. If the stock price at expiration is $62.21, what is your dollar profit? What if the stock price is $53.90?

8. Stock Quotations  You found the following stock quote for Gigantus Corporation in today’s newspaper. What was the stock selling for on January 1?

<table>
<thead>
<tr>
<th>YTD % Chg</th>
<th>52 Weeks Hi</th>
<th>52 Weeks Lo</th>
<th>Stock</th>
<th>Sym</th>
<th>Div</th>
<th>Yld %</th>
<th>PE</th>
<th>Vol 100s</th>
<th>Last Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>+16.5</td>
<td>94.02</td>
<td>73.20</td>
<td>Gigantus</td>
<td>GIG</td>
<td>1.75</td>
<td>1.9</td>
<td>34</td>
<td>12690</td>
<td>93.60</td>
</tr>
</tbody>
</table>

9. Bond Quotations  Suppose the following bond quote for ISU Corporation appears in the financial pages of today’s newspaper. If this bond has a face value of $1,000, what closing price appeared in yesterday’s newspaper?

<table>
<thead>
<tr>
<th>Bonds</th>
<th>Cur Yld</th>
<th>Vol</th>
<th>Close</th>
<th>Net Chg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISU 63/4 15</td>
<td>7.4</td>
<td>10</td>
<td>??</td>
<td>-.32</td>
</tr>
</tbody>
</table>

10. Bond Quotations  In the previous problem, in what year does the bond mature? If you currently own 25 of these bonds, how much money will you receive on the next coupon payment date?

Intermediate Questions

11. Futures Quotations  The following quotations for cotton futures trading on the New York Cotton Exchange appear in today’s newspaper. How many of the March contracts are currently open? How many of these contracts should you sell if you wish to deliver 400,000 pounds of cotton in March? If you actually make delivery, how much will you receive? Assume you locked in the settle price.

| COTTON (CTN)—50,000 LBS.; CENTS PER LB. |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Mar | 49.20 | 49.45 | 48.65 | 48.72 | -.39 | 55.25 | 36.20 | 45,070 |
| May | 53.15 | 53.35 | 52.60 | 52.69 | -.36 | 55.50 | 38.70 | 6,187 |
| July | 54.30 | 54.40 | 53.80 | 53.80 | -.40 | 56.00 | 39.50 | 6,068 |
| Dec | 54.60 | 54.60 | 54.40 | 54.40 | -.65 | 55.85 | 43.80 | 4,081 |
12. Futures Quotations  In the previous problem, approximately how many cotton futures contracts of all maturities were traded yesterday? The day before yesterday?

13. Using Futures Quotations  In Problem 11, suppose you buy 15 of the December cotton futures contracts. One month from now, the futures price of this contract is 63.21, and you close out your position. Calculate your dollar profit on this investment.

14. Options Quotations  Suppose the following stock options quotations for GNR, Inc., appear in today’s financial pages. What was the closing share price of the underlying stock? If you wanted to purchase the right to sell 1,500 shares of GNR stock in January at a strike price of $50 per share, how much would this cost you?

<table>
<thead>
<tr>
<th>Call Option / Strike</th>
<th>Exp.</th>
<th>Vol.</th>
<th>Last</th>
<th>Vol.</th>
<th>Last</th>
</tr>
</thead>
<tbody>
<tr>
<td>AYD 40 45 Dec</td>
<td></td>
<td></td>
<td>6.50</td>
<td>1</td>
<td>0.05</td>
</tr>
<tr>
<td>45.87 45 Dec</td>
<td>21</td>
<td>1.20</td>
<td>16</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>45.87 45 Jan</td>
<td>42</td>
<td>2.25</td>
<td>67</td>
<td>1.40</td>
<td></td>
</tr>
<tr>
<td>45.87 50 Dec</td>
<td>85</td>
<td>0.10</td>
<td>89</td>
<td>3.50</td>
<td></td>
</tr>
<tr>
<td>45.87 50 Jan</td>
<td>8</td>
<td>0.35</td>
<td>124</td>
<td>3.80</td>
<td></td>
</tr>
<tr>
<td>45.87 50 Feb</td>
<td>160</td>
<td>0.75</td>
<td>193</td>
<td>4.40</td>
<td></td>
</tr>
<tr>
<td>45.87 50 Dec</td>
<td>35</td>
<td>0.10</td>
<td>68</td>
<td>8.50</td>
<td></td>
</tr>
<tr>
<td>45.87 55 Jan</td>
<td>28</td>
<td>0.10</td>
<td>19</td>
<td>9.20</td>
<td></td>
</tr>
<tr>
<td>45.87 55 Feb</td>
<td>9</td>
<td>0.10</td>
<td>4</td>
<td>9.40</td>
<td></td>
</tr>
<tr>
<td>45.87 60 Feb</td>
<td>2</td>
<td>0.05</td>
<td>7</td>
<td>13.50</td>
<td></td>
</tr>
</tbody>
</table>

15. Options Quotations  In the previous problem, which put contract sells for the lowest price? Which one sells for the highest price? Explain why these respective options trade at such extreme prices.

16. Using Options Quotations  In Problem 14, suppose GNR stock sells for $42 per share immediately prior to your options’ expiration. What is the rate of return on your investment? What is your rate of return if the stock sells for $56 per share (think about it)? Assume your holding period for this investment is exactly three months.

17. Options versus Stock  You’ve located the following option quote for Eric-Cartman, Inc. (ECI):

<table>
<thead>
<tr>
<th>Option/Strike</th>
<th>Exp.</th>
<th>Vol.</th>
<th>Last</th>
<th>Vol.</th>
<th>Last</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECI</td>
<td>10</td>
<td>Sep</td>
<td>29</td>
<td>5.50</td>
<td>2....</td>
</tr>
<tr>
<td>20.25</td>
<td>15</td>
<td>Sep</td>
<td>333</td>
<td>7</td>
<td>69</td>
</tr>
<tr>
<td>20.25</td>
<td>25</td>
<td>Dec</td>
<td>5</td>
<td>2</td>
<td>188</td>
</tr>
<tr>
<td>20.25</td>
<td>30</td>
<td>Sep</td>
<td>76</td>
<td>2</td>
<td>8....</td>
</tr>
<tr>
<td>20.25</td>
<td>35</td>
<td>Oct</td>
<td>89</td>
<td>0.50</td>
<td>13....</td>
</tr>
</tbody>
</table>

Three of the premiums shown can’t possibly be correct. Which three? Why?

18. Annualized Returns  Suppose you have $20,000 to invest. You’re considering Miller- Moore Equine Enterprises (MIME), which is currently selling for $25 per share. You also notice that a call option with a $25 strike price and six months to maturity is available. The premium is $2.50. MIME pays no dividends. What is your annualized return from these two investments if, in six months, MIME is selling for $31 per share? What about $22 per share?
19. **Annualized Returns** In the previous question, suppose a dividend of $.50 per share is paid. Comment on how the returns would be affected.

20. **Option Returns** In Problem 18, suppose a put option with a $25 strike is also available with a premium of $2. Calculate your percentage return for the six-month holding period if the stock price declines to $21.50 per share.

---

**Answers**

1. \[ \text{Value} = $33.33; \]
   \[ \text{Value} = $32.90 \]
   
   8,153 round lots of stock were traded.

2. \[ \text{Value} = $69,444,444; \]

3. \[ \frac{3.24}{4} = \$0.8105/\text{share}. \]

4. \[ \text{Value} = $5.06 \]

5. Next payment = $18,750
   
   Payment at maturity = $518,750

6. Contract to buy = 16
   
   Purchase price = $600,000
   
   P = $785: Gain = $28,000
   
   P = $730: Gain = –$16,000

7. Cost of contracts = $3,000
   
   If the stock price is $62.21, \[ \text{Value} = $7,210.00 \]
   
   Dollar return = $4,210
   
   If the stock price is $53.90, the call is worthless, so the dollar return is –$3,000.

8. \[ \text{Value} = $80.34 \]

9. Current yield = 0.074 = $67.50/P₀; \[ P₀ = \frac{67.50}{0.074} = \$912.16 \]
   
   Bond closed down 0.32, so yesterday’s closing price = 91.54.

10. The bond matures in the year 2015. Next payment = 25(0.0675/2)(1,000) = $843.75.

**Intermediate Questions**

11. Open interest in the March contract is 45,070 contracts.
    
    = 8 contracts.
    
    = $194,880.

12. Trading volume yesterday in all open contracts was approximately 4,814.
    
    The day before yesterday, 5,356 contracts were traded.

13. Initial value of position = $408,000
    
    Final value of position = $474,075
14. $15(3.80)(100) = $5,700

15. The cheapest put contract (that traded on this particular day) is the December 40 put and the February 60 call. The most expensive option is the February 60 put. The first option is cheap because it has little time left to maturity and is not likely to be worth anything since the strike price is below the current market price. The February 60 call sells for so little since the stock is far out of the money. The latter option is expensive because it has a relatively long time to maturity and the strike price is well above the current stock price.

16. Case 1: $6,300
Return on investment per 3 months = 110.53%
Annualized return on investment = 1864.38%

Case 2: $5,400
Return on investment = −100% over all time periods.

17. The very first call option listed has a strike price of 10 and a quoted premium of $5.50. Similarly, the September 30 put is quoted at $8.75.

18. To annualize your return, we need to compute the effective annual return, recognizing that there are two six-month periods in a year.

\[ 1 + \text{EAR} = 1.24^2 = 1.5376 \]
\[ \text{EAR} = .5376 = 53.76\% \]

Your annualized return on the stock is 53.76%.

If MMEE is selling for $22 per share, your loss on the stock investment is −12%, which annualizes as follows:

\[ 1 + \text{EAR} = .88^2 = .7744 \]
\[ \text{EAR} = −.2256 = −22.56\% \]

At the $31 price,

\[ 1 + \text{EAR} = 2.4^2 = 5.76 \]
\[ \text{EAR} = 4.76 = 476\% \]

However, if MMEE is selling for $22 when your options mature, then you lose everything ($20,000 investment), and your return is −100%.

19. You only get the dividend if you own the stock. The dividend would increase the return on your stock investment by the amount of the dividend yield, $.50/$25 = .02, or 2%, but it would have no effect on your option investment. This question illustrates that an important difference between owning the stock and the option is that you only get the dividend if you own the stock.

20. You invested $20,000, so your dollar return is $35,000 − 20,000 = $15,000, and your percentage return is $15,000/$20,000 = 75%. This annualizes to:

\[ 1 + \text{EAR} = 1.75^2 = 3.0625 \]
\[ \text{EAR} = 2.0625 = 206.25\% \]