

**TRUE/FALSE**

1. The rate of exchange between certain future dollars and certain current dollars is known as the pure rate of interest.

ANS: T                      PTS: 1

2. An investment is the current commitment of dollars over time to derive future payments to compensate the investor for the time funds are committed, the expected rate of inflation and the uncertainty of future payments.

ANS: T                      PTS: 1

3. The holding period return (HPR) is equal to the holding period yield (HPY) stated as a percentage.

ANS: F                      PTS: 1

4. The geometric mean of a series of returns is always larger than the arithmetic mean and the difference increases with the volatility of the series.

ANS: F                      PTS: 1

5. The expected return is the average of all possible returns.

ANS: F                      PTS: 1

6. Two measures of the risk premium are the standard deviation and the variance.

ANS: F                      PTS: 1

7. The variance of expected returns is equal to the square root of the expected returns.

ANS: F                      PTS: 1

8. The coefficient of variation is the expected return divided by the standard deviation of the expected return.

ANS: F                      PTS: 1

9. Nominal rates are averages of all possible real rates.

ANS: F                      PTS: 1

10. The risk premium is a function of the volatility of operating earnings, sales volatility and inflation.

ANS: F                      PTS: 1

11. An individual who selects the investment that offers greater certainty when everything else is the same is known as a risk averse investor.

ANS: T PTS: 1

12. Investors are willing to forgo current consumption in order to increase future consumption for a nominal rate of interest.

ANS: F PTS: 1

13. The two most common calculations investors use to measure return performance are arithmetic means and geometric means.

ANS: T PTS: 1

14. The arithmetic mean is a superior measure of the long-term performance because it indicates the compound annual rate of return based on the ending value of the investment versus its beginning value.

ANS: F PTS: 1

### MULTIPLE CHOICE

1. The basic trade-off in the investment process is
- between the anticipated rate of return for a given investment instrument and its degree of risk.
  - between understanding the nature of a particular investment and having the opportunity to purchase it.
  - between high returns available on single instruments and the diversification of instruments into a portfolio.
  - between the desired level of investment and possessing the resources necessary to carry it out.
  - None of the above.

ANS: A PTS: 1 OBJ: Multiple Choice

2. The rate of exchange between future consumption and current consumption is
- The nominal risk-free rate.
  - The coefficient of investment exchange.
  - The pure rate of interest.
  - The consumption/investment paradigm.
  - The expected rate of return.

ANS: C PTS: 1 OBJ: Multiple Choice

3. The \_\_\_\_ the variance of returns, everything else remaining constant, the \_\_\_\_ the dispersion of expectations and the \_\_\_\_ the risk.
- Larger, greater, lower
  - Larger, smaller, higher
  - Larger, greater, higher
  - Smaller, greater, lower
  - Smaller, greater, greater

ANS: C PTS: 1 OBJ: Multiple Choice

4. The coefficient of variation is a measure of
- Central tendency.

- b. Absolute variability.
- c. Absolute dispersion.
- d. Relative variability.
- e. Relative return.

ANS: D                      PTS: 1                      OBJ: Multiple Choice

5. The nominal risk free rate of interest is a function of
- a. The real risk free rate and the investment's variance.
  - b. The prime rate and the rate of inflation.
  - c. The T-bill rate plus the inflation rate.
  - d. The tax free rate plus the rate of inflation.
  - e. The real risk free rate and the rate of inflation.

ANS: E                      PTS: 1                      OBJ: Multiple Choice

6. In the phrase "nominal risk free rate," nominal means
- a. Computed.
  - b. Historical.
  - c. Market.
  - d. Average.
  - e. Risk adverse.

ANS: C                      PTS: 1                      OBJ: Multiple Choice

7. If a significant change is noted in the yield of a T-bill, the change is most likely attributable to
- a. A downturn in the economy.
  - b. A static economy.
  - c. A change in the expected rate of inflation.
  - d. A change in the real rate of interest.
  - e. A change in risk aversion.

ANS: C                      PTS: 1                      OBJ: Multiple Choice

8. The real risk-free rate is affected by a two factors;
- a. The relative ease or tightness in capital markets and the expected rate of inflation.
  - b. The expected rate of inflation and the set of investment opportunities available in the economy.
  - c. The relative ease or tightness in capital markets and the set of investment opportunities available in the economy.
  - d. Time preference for income consumption and the relative ease or tightness in capital markets.
  - e. Time preference for income consumption and the set of investment opportunities available in the economy.

ANS: E                      PTS: 1                      OBJ: Multiple Choice

9. Which of the following is **not** a component of the risk premium?
- a. Business risk
  - b. Financial risk
  - c. Liquidity risk
  - d. Exchange rate risk
  - e. Unsystematic market risk

ANS: E                      PTS: 1                      OBJ: Multiple Choice

10. The ability to sell an asset quickly at a fair price is associated with
- Business risk.
  - Liquidity risk.
  - Exchange rate risk.
  - Financial risk.
  - Market risk.

ANS: B                      PTS: 1                      OBJ: Multiple Choice

11. The variability of operating earnings is associated with
- Business risk.
  - Liquidity risk.
  - Exchange rate risk.
  - Financial risk.
  - Market risk.

ANS: A                      PTS: 1                      OBJ: Multiple Choice

12. The uncertainty of investment returns associated with how a firm finances its investments is known as
- Business risk.
  - Liquidity risk.
  - Exchange rate risk.
  - Financial risk.
  - Market risk.

ANS: D                      PTS: 1                      OBJ: Multiple Choice

13. What will happen to the security market line (SML) if the following events occur, other things constant: (1) inflation expectations increase, and (2) investors become more risk averse?
- Shift up and keep the same slope
  - Shift up and have less slope
  - Shift up and have a steeper slope
  - Shift down and keep the same slope
  - Shift down and have less slope

ANS: C                      PTS: 1                      OBJ: Multiple Choice

14. A decrease in the market risk premium, all other things constant, will cause the security market line to
- Shift up
  - Shift down
  - Have a steeper slope
  - Have a flatter slope
  - Remain unchanged

ANS: D                      PTS: 1                      OBJ: Multiple Choice

15. A decrease in the expected real growth in the economy, all other things constant, will cause the security market line to
- Shift up
  - Shift down
  - Have a steeper slope
  - Have a flatter slope
  - Remain unchanged

ANS: B                      PTS: 1                      OBJ: Multiple Choice

16. Unsystematic risk refers to risk that is
- a. Undiversifiable
  - b. Diversifiable
  - c. Due to fundamental risk factors
  - d. Due to market risk
  - e. None of the above

ANS: B                      PTS: 1                      OBJ: Multiple Choice

17. The security market line (SML) graphs the expected relationship between
- a. Business risk and financial risk
  - b. Systematic risk and unsystematic risk
  - c. Risk and return
  - d. Systematic risk and unsystematic return
  - e. None of the above

ANS: C                      PTS: 1                      OBJ: Multiple Choice

18. Two factors that influence the nominal risk-free rate are;
- a. The relative ease or tightness in capital markets and the expected rate of inflation.
  - b. The expected rate of inflation and the set of investment opportunities available in the economy.
  - c. The relative ease or tightness in capital markets and the set of investment opportunities available in the economy.
  - d. Time preference for income consumption and the relative ease or tightness in capital markets.
  - e. Time preference for income consumption and the set of investment opportunities available in the economy.

ANS: A                      PTS: 1                      OBJ: Multiple Choice

19. Measures of risk for an investment include
- a. Variance of returns and business risk
  - b. Coefficient of variation of returns and financial risk
  - c. Business risk and financial risk
  - d. Variance of returns and coefficient of variation of returns
  - e. All of the above

ANS: D                      PTS: 1                      OBJ: Multiple Choice

20. Sources of risk for an investment include
- a. Variance of returns and business risk
  - b. Coefficient of variation of returns and financial risk
  - c. Business risk and financial risk
  - d. Variance of returns and coefficient of variation of returns
  - e. All of the above

ANS: C                      PTS: 1                      OBJ: Multiple Choice

21. Modern portfolio theory assumes that most investors are
- a. Risk averse
  - b. Risk neutral
  - c. Risk seekers
  - d. Risk tolerant
  - e. None of the above

ANS: A                      PTS: 1                      OBJ: Multiple Choice

22. Which of the following is not a component of the required rate of return?
- a. Expected rate of inflation
  - b. Time value of money
  - c. Risk
  - d. Holding period return
  - e. All of the above are components of the required rate of return

ANS: D                      PTS: 1                      OBJ: Multiple Choice

23. All of the following are major sources of uncertainty EXCEPT
- a. Business risk
  - b. Financial risk
  - c. Default risk
  - d. Country risk
  - e. Liquidity risk

ANS: C                      PTS: 1                      OBJ: Multiple Choice

24. The total risk for a security can be measured by its
- a. Beta with the market portfolio
  - b. Systematic risk
  - c. Standard deviation of returns
  - d. Unsystematic risk
  - e. Alpha with the market portfolio

ANS: C                      PTS: 1                      OBJ: Multiple Choice

25. The increase in yield spreads in late 2008 and early 2009 indicated that
- a. Credit risk premiums decreased
  - b. Market risk premiums increased
  - c. Investors are more confident of the future cash flows of bonds
  - d. Non-investment grade bonds are less risky
  - e. Government bonds are no longer a risk free investment

ANS: B                      PTS: 1                      OBJ: Multiple Choice

26. Which of the following is *least likely* to move a firm's position to the right on the Security Market Line (SML)?
- a. An increase in the firm's beta
  - b. Adding more financial debt to the firm's balance sheet relative to equity
  - c. Changing the business strategy to include new product lines with more volatile expected cash flows
  - d. Investors perceive the stock as being more risky
  - e. An increase in the risk-free required rate of return.

ANS: E                      PTS: 1                      OBJ: Multiple Choice

### **Exhibit 1.1**

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

Assume you bought 100 shares of NewTech common stock on January 15, 2003 at \$50.00 per share and sold it on January 15, 2004 for \$40.00 per share.

27. Refer to Exhibit 1.1. What was your holding period return?
- a. -10%
  - b. -0.8
  - c. 25%
  - d. 0.8
  - e. -20%

ANS: D

$$\text{HPR} = \text{Ending Value} / \text{Beginning Value} = 40/50 = 0.8$$

PTS: 1 OBJ: Multiple Choice Problem

28. Refer to Exhibit 1.1. What was your holding period yield?
- a. -10%
  - b. -0.8
  - c. 25%
  - d. 0.8
  - e. -20%

ANS: E

$$\text{HPY} = \text{HPR} - 1 = (40/50) - 1 = 0.8 - 1 = -0.2 = -20\%$$

PTS: 1 OBJ: Multiple Choice Problem

### Exhibit 1.2

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

Suppose you bought a GM corporate bond on January 25, 2001 for \$750, on January 25, 2004 sold it for \$650.00.

29. Refer to Exhibit 1.2. What was your annual holding period return?
- a. 0.8667
  - b. -0.1333
  - c. 0.0333
  - d. 0.9534
  - e. -0.0466

ANS: D

$$\text{HPR} = \text{Ending Value} / \text{Beginning Value} = \$650.00 / \$750 = 0.8667$$

$$\text{Annual HPR} = (\text{HPR})^{1/n} = (0.8667)^{1/3} = 0.9534$$

PTS: 1 OBJ: Multiple Choice Problem

30. Refer to Exhibit 1.2. What was your annual holding period yield?
- a. -0.0466
  - b. -0.1333
  - c. 0.0333
  - d. 0.3534
  - e. 0.8667

ANS: A

$$\text{HPR} = \text{Ending Value} / \text{Beginning Value} = \$650.00 / \$750 = 0.8667$$

$$\text{Annual HPR} = (\text{HPR})^{1/n} = (0.8667)^{1/3} = 0.9534$$

$$\text{Annual HPY} = \text{Annual HPR} - 1 = 0.9534 - 1 = -0.0466 = -4.66\%$$

PTS: 1 OBJ: Multiple Choice Problem

### Exhibit 1.3

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

The common stock of XMen Inc. had the following historic prices.

| Time      | Price of X-Tech |
|-----------|-----------------|
| 3/01/1999 | 50.00           |
| 3/01/2000 | 47.00           |
| 3/01/2001 | 76.00           |
| 3/01/2002 | 80.00           |
| 3/01/2003 | 85.00           |
| 3/01/2004 | 90.00           |

31. Refer to Exhibit 1.3. What was your holding period return for the time period 3/1/1999 to 3/1/2004?
- 0.1247
  - 1.8
  - 0.1462
  - 0.40
  - 0.25

ANS: B

$$\text{HPR} = \text{Ending Value} / \text{Beginning Value} = 90 / 50 = 1.8$$

PTS: 1 OBJ: Multiple Choice Problem

32. Refer to Exhibit 1.3. What was your annual holding period yield (Annual HPY)?
- 0.1462
  - 0.1247
  - 1.8
  - 0.40
  - 0.25

ANS: B

$$\text{Annual HPR} = (\text{HPR})^{1/n} = (1.8)^{1/5} = 1.1247$$

$$\text{Annual HPY} = \text{Annual HPR} - 1 = 1.1247 - 1 = 0.1247 = 12.47\%$$

| Time      | Price of X-Tech | Return  | HPR    |
|-----------|-----------------|---------|--------|
| 3/01/1999 | 50              |         |        |
| 3/01/2000 | 47              | -0.0600 | 0.9400 |
| 3/01/2001 | 76              | 0.6170  | 1.6170 |
| 3/01/2002 | 80              | 0.0526  | 1.0526 |
| 3/01/2003 | 85              | 0.0625  | 1.0625 |
| 3/01/2004 | 90              | 0.0588  | 1.0588 |

PTS: 1 OBJ: Multiple Choice Problem

33. Refer to Exhibit 1.3. What was your arithmetic mean annual yield for the investment in XMen Industries.
- 0.1462
  - 0.1247
  - 1.8
  - 0.40
  - 0.25

ANS: A

Arithmetic Mean =

$$\frac{1}{N} \sum_{t=1}^N HPY_t = \frac{-0.06 + 0.617 + 0.0526 + 0.0625 + 0.588}{5} = 0.1462$$

PTS: 1

OBJ: Multiple Choice Problem

34. Refer to Exhibit 1.3. What was your geometric mean annual yield for the investment in XMen?
- 0.25
  - 0.40
  - 1.8
  - 0.1247
  - 0.1462

ANS: D

$$\begin{aligned} \text{Geometric Mean} &= \prod_{t=1}^N (HPR_t)^{1/N} - 1 \\ &= [(0.94)(1.617)(1.0526)(1.0588)]^{1/5} - 1 \\ &= 1.1247 - 1 = 0.1247 = 12.47\% \end{aligned}$$

PTS: 1

OBJ: Multiple Choice Problem

#### Exhibit 1.4

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

You have concluded that next year the following relationships are possible:

| Economic Status | Probability | Rate of Return |
|-----------------|-------------|----------------|
| Weak Economy    | .15         | -5%            |
| Static Economy  | .60         | 5%             |
| Strong Economy  | .25         | 15%            |

35. Refer to Exhibit 1.4. What is your expected rate of return  $[E(R_i)]$  for next year?
- 4.25%
  - 6.00%
  - 6.25%
  - 7.75%
  - 8.00%

ANS: B

$$E(R_i) = (0.15)(-5) + (0.60)(5) + (0.25)(15) = 6\%$$

PTS: 1

OBJ: Multiple Choice Problem

36. Refer to Exhibit 1.4. Compute the standard deviation of the rate of return for the one year period.
- 0.65%
  - 1.45%
  - 4.0%
  - 6.25%
  - 6.4%

ANS: D

$$\sigma = [(0.15)(-5 - 6)^2 + (0.60)(5 - 6)^2 + (0.25)(15 - 6)^2]^{1/2} = 6.25\%$$

PTS: 1

OBJ: Multiple Choice Problem

37. Refer to Exhibit 1.4. Compute the coefficient of variation for your portfolio.
- 0.043
  - 0.12
  - 1.40
  - 0.69
  - 1.04

ANS: E

$$\begin{aligned} CV &= \text{Standard Deviation of Returns/Expected Rate of Return} \\ &= 6.25/6 = 1.04 \end{aligned}$$

PTS: 1

OBJ: Multiple Choice Problem

### Exhibit 1.5

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

Assume that during the past year the consumer price index increased by 1.5 percent and the securities listed below returned the following nominal rates of return.

|                         |       |
|-------------------------|-------|
| U.S. Government T-bills | 2.75% |
| U.S. Long-term bonds    | 4.75% |

38. Refer to Exhibit 1.5. What are the real rates of return for each of these securities?
- 4.29% and 6.32%
  - 1.23% and 4.29%
  - 3.20% and 6.32%
  - 1.23% and 3.20%
  - 3.75% and 5.75%

ANS: D

$$\text{Real rate on T-bills} = (1.0275/1.015) - 1 = 0.0123 = 1.23\%$$

$$\text{Real rate on bonds} = (1.0475/1.015) - 1 = 0.032 = 3.2\%$$

PTS: 1

OBJ: Multiple Choice Problem

39. Refer to Exhibit 1.5. If next year the real rates all rise by 10 percent while inflation climbs from 1.5 percent to 2.5 percent, what will be the nominal rate of return on each security?
- 1.24% and 1.52%
  - 1.35% and 3.52%

- c. 3.89% and 6.11%
- d. 3.52% and 3.89%
- e. 1.17% and 6.11%

ANS: C

The computations for the new real rates are:

$$\text{Real rate on T-bills} = 1.23 \times 1.10 = 1.353\%$$

$$\text{Real rate on bonds} = 3.2 \times 1.10 = 3.52\%$$

$$\text{Nominal rate on T-bills} = (1.01353)(1.025) - 1 = .03886 = 3.89\%$$

$$\text{Nominal rate on corporate bonds} = (1.0352)(1.025) - 1 = .06108 = 6.11\%$$

PTS: 1

OBJ: Multiple Choice Problem

40. If over the past 20 years the annual returns on the S&P 500 market index averaged 12% with a standard deviation of 18%, what was the coefficient of variation?
- a. 0.6
  - b. 0.6%
  - c. 1.5
  - d. 1.5%
  - e. 0.66%

ANS: C

$$\begin{aligned} \text{Coefficient of Variation} &= \text{Standard Deviation of Returns/Expected Rate of Return} \\ &= 18\%/12\% = 1.5 \end{aligned}$$

PTS: 1

OBJ: Multiple Choice Problem

41. Given investments A and B with the following risk return characteristics, which one would you prefer and why?

| Investment | Expected Return | Standard Deviation<br>of Expected Returns |
|------------|-----------------|-------------------------------------------|
| A          | 12.2%           | 7%                                        |
| B          | 8.8%            | 5%                                        |

- a. Investment A because it has the highest expected return.
- b. Investment A because it has the lowest relative risk.
- c. Investment B because it has the lowest absolute risk.
- d. Investment B because it has the lowest coefficient of variation.
- e. Investment A because it has the highest coefficient of variation.

ANS: D

$$\text{Coefficient of Variation} = \text{Standard Deviation of Returns/Expected Rate of Return}$$

$$CV_A = 7\%/12.2\% = 0.573$$

$$CV_B = 5\%/8.8\% = 0.568$$

Investment B has the lowest coefficient of variation and would be preferred.

PTS: 1

OBJ: Multiple Choice Problem

**Exhibit 1.6**

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

You are provided with the following information:

Nominal return on risk-free asset = 4.5%

Expected return for asset i = 12.75%

Expected return on the market portfolio = 9.25%

42. Refer to Exhibit 1.6. Calculate the risk premium for asset i.
- a. 4.5%
  - b. 8.25%
  - c. 4.75%
  - d. 3.5%
  - e. None of the above

ANS: B

Risk premium for asset i =  $12.75 - 4.5 = 8.25\%$

PTS: 1                      OBJ: Multiple Choice Problem

43. Refer to Exhibit 1.6. Calculate the risk premium for the market portfolio.
- a. 4.5%
  - b. 8.25%
  - c. 4.75%
  - d. 3.5%
  - e. None of the above

ANS: C

Risk premium market portfolio =  $9.25 - 4.5 = 4.75\%$

PTS: 1                      OBJ: Multiple Choice Problem

**Exhibit 1.7**

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

Consider the following information

Nominal annual return on U.S. government T-bills for year 2009 = 3.5%

Nominal annual return on U.S. government long-term bonds for year 2009 = 4.75%

Nominal annual return on U.S. large-cap stocks for year 2009 = 8.75%

Consumer price index January 1, 2009 = 165

Consumer price index December 31, 2009 = 169

44. Refer to Exhibit 1.7. Compute the rate of inflation for the year 2009.
- a. 2.42%
  - b. 4.0%
  - c. 1.69%
  - d. 1.24%
  - e. None of the above

ANS: A

Rate of inflation =  $(169/165) - 1 = .0242 = 2.42\%$

PTS: 1                      OBJ: Multiple Choice Problem

45. Refer to Exhibit 1.7. Calculate the annual real rate of return for U.S. T-bills.
- a. 2.26%
  - b. 1.81%
  - c. -0.5%
  - d. 1.05%
  - e. None of the above

ANS: D

Real return on U.S. T-bills =  $(1.035/1.0242) - 1 = .0105 = 1.05\%$

PTS: 1 OBJ: Multiple Choice Problem

46. Refer to Exhibit 1.7. Calculate the annual real rate of return for U.S. long-term bonds.
- a. 3.06%
  - b. 2.27%
  - c. 2.51%
  - d. 3.5%
  - e. None of the above

ANS: B

Real return on U.S. bonds =  $(1.0475/1.0242) - 1 = .0227 = 2.27\%$

PTS: 1 OBJ: Multiple Choice Problem

47. Refer to Exhibit 1.7. Calculate the annual real rate of return for U.S. large-cap stocks.
- a. 7.06%
  - b. 6.18%
  - c. 4.75%
  - d. 3.75%
  - e. None of the above

ANS: B

Real return on U.S. stocks =  $(1.0875/1.0242) - 1 = .0618 = 6.18\%$

PTS: 1 OBJ: Multiple Choice Problem

### Exhibit 1.8

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

Assume that you hold a two stock portfolio. You are provided with the following information on your holdings:

| Stock | Shares | Price(t) | Price(t + 1) |
|-------|--------|----------|--------------|
| 1     | 15     | 10       | 12           |
| 2     | 25     | 15       | 16           |

48. Refer to Exhibit 1.8. Calculate the HPY for stock 1.
- a. 10%
  - b. 20%
  - c. 15%
  - d. 12%
  - e. 7%

ANS: B

| Stock | Shares | Price(t) | MV<br>(t) | Price<br>(t+1) | MV<br>(t+1) | HPR  | HPY  | Weight | Weighted<br>HPY |
|-------|--------|----------|-----------|----------------|-------------|------|------|--------|-----------------|
| 1     | 15     | 10       | 150       | 12             | 180         | 1.2  | 0.2  | 0.29   | 0.058           |
| 2     | 25     | 15       | 375       | 16             | 400         | 1.07 | 0.07 | 0.71   | 0.048           |
|       |        |          | 525       |                | 580         |      |      |        | 0.106           |

HPY for stock 1 =  $(180/150) - 1 = .2 = 20\%$

PTS: 1 OBJ: Multiple Choice Problem

49. Refer to Exhibit 1.8. Calculate the HPY for stock 2.

- a. 5%
- b. 6%
- c. 7%
- d. 8%
- e. 10%

ANS: C

| Stock | Shares | Price(t) | MV<br>(t) | Price<br>(t+1) | MV<br>(t+1) | HPR  | HPY  | Weight | Weighted<br>HPY |
|-------|--------|----------|-----------|----------------|-------------|------|------|--------|-----------------|
| 1     | 15     | 10       | 150       | 12             | 180         | 1.2  | 0.2  | 0.29   | 0.058           |
| 2     | 25     | 15       | 375       | 16             | 400         | 1.07 | 0.07 | 0.71   | 0.048           |
|       |        |          | 525       |                | 580         |      |      |        | 0.106           |

HPY for stock 2 =  $(400/375) - 1 = .07 = 7\%$

PTS: 1 OBJ: Multiple Choice Problem

50. Refer to Exhibit 1.8. Calculate the market weights for stock 1 and 2 based on period t values.

- a. 39% for stock 1 and 61% for stock 2
- b. 50% for stock 1 and 50% for stock 2
- c. 71% for stock 1 and 29% for stock 2
- d. 29% for stock 1 and 71% for stock 2
- e. None of the above

ANS: D

| Stock | Shares | Price(t) | MV<br>(t) | Price<br>(t+1) | MV<br>(t+1) | HPR  | HPY  | Weight | Weighted<br>HPY |
|-------|--------|----------|-----------|----------------|-------------|------|------|--------|-----------------|
| 1     | 15     | 10       | 150       | 12             | 180         | 1.2  | 0.2  | 0.29   | 0.058           |
| 2     | 25     | 15       | 375       | 16             | 400         | 1.07 | 0.07 | 0.71   | 0.048           |
|       |        |          | 525       |                | 580         |      |      |        | 0.106           |

Market weight for stock 1 =  $150/525 = .29 = 29\%$

Market weight for stock 2 =  $375/525 = .71 = 71\%$

PTS: 1 OBJ: Multiple Choice Problem

51. Refer to Exhibit 1.8. Calculate the HPY for the portfolio.

- a. 10.6%
- b. 6.95%
- c. 13.5%
- d. 10%
- e. 15.7%

ANS: A

| Stock | Shares | Price(t) | MV<br>(t) | Price<br>(t+1) | MV<br>(t+1) | HPR  | HPY  | Weight | Weighted<br>HPY |
|-------|--------|----------|-----------|----------------|-------------|------|------|--------|-----------------|
| 1     | 15     | 10       | 150       | 12             | 180         | 1.2  | 0.2  | 0.29   | 0.058           |
| 2     | 25     | 15       | 375       | 16             | 400         | 1.07 | 0.07 | 0.71   | 0.048           |
|       |        |          | 525       |                | 580         |      |      |        | 0.106           |

$$\text{Portfolio HPY} = .29(.20) + .71(.07) = .106 = 10.6\%$$

PTS: 1 OBJ: Multiple Choice Problem

**Exhibit 1.9**

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

You purchased 100 shares of GE common stock on January 1, for \$29 a share. A year later you received \$1.25 in dividends per share and you sold it for \$28 a share.

52. Refer to Exhibit 1.9. Calculate your holding period return (HPR) for this investment in GE stock.
- 0.9655
  - 1.0086
  - 1.0357
  - 1.0804
  - 1.0973

ANS: B

$$\text{HPR} = (28 + 1.25)/29 = 1.0086$$

PTS: 1 OBJ: Multiple Choice Problem

53. Refer to Exhibit 1.9. Calculate your holding period yield (HPY) for this investment in GE stock.
- 0.0345
  - 0.0090
  - 0.0086
  - 0.0643
  - 0.0804

ANS: C

$$\text{HPY} = (28 + 1.25)/29 - 1 = 1.0086 - 1 = 0.0086$$

PTS: 1 OBJ: Multiple Choice Problem

**Exhibit 1.10**

USE THE INFORMATION BELOW FOR THE FOLLOWING PROBLEM(S)

The annual rates of return of Stock Z for the last four years are 0.10, 0.15, -0.05, and 0.20, respectively.

54. Refer to Exhibit 1.10. Compute the arithmetic mean annual rate of return for Stock Z.
- 0.03
  - 0.04
  - 0.06
  - 0.10
  - 0.40

ANS: D

$$AM = (0.10 + 0.15 - 0.05 + 0.20)/4 = 0.10$$

PTS: 1 OBJ: Multiple Choice Problem

55. Refer to Exhibit 1.10. Compute the standard deviation of the annual rate of return for Stock Z.
- 0.0070
  - 0.0088
  - 0.0837
  - 0.0935
  - 0.1145

ANS: D

$$\begin{aligned} \text{Std Dev} &= \sqrt{\frac{(0.10 - 0.10)^2 + (0.15 - 0.10)^2 + (-0.05 - 0.10)^2 + (0.20 - 0.10)^2}{4}} \\ &= \sqrt{\frac{0 + .0025 + .0225 + .01}{4}} = \sqrt{\frac{.035}{4}} = .0935 \end{aligned}$$

PTS: 1 OBJ: Multiple Choice Problem

56. Refer to Exhibit 1.10. Compute the coefficient of variation for Stock Z.
- 0.837
  - 0.935
  - 1.070
  - 1.145
  - 1.281

ANS: B

The coefficient of variation is equal to the standard deviation divided by the expected return.  
 $.0935/10 = 0.935$

PTS: 1 OBJ: Multiple Choice Problem

57. Refer to Exhibit 1.10. Compute the geometric mean rate of return for Stock Z.
- 0.051
  - 0.074
  - 0.096
  - 0.150
  - 1.090

ANS: C

$$[(1.1)(1.15)(0.95)(1.2)]^{1/4} = 1.0958 - 1 = 0.0958$$

PTS: 1 OBJ: Multiple Choice Problem

58. Economists project the long-run real growth rate for the next five years to be 2.5 percent and the average annual rate of inflation over this five year period to be 3 percent. What is the expected nominal rate of return over the next five years?
- 0.500 percent
  - 1.056 percent
  - 2.750 percent
  - 5.500 percent
  - 5.575 percent

ANS: E

$$1 - (1.025)(1.03) = 1 - 1.05575 = 5.575\%$$

PTS: 1

OBJ: Multiple Choice Problem