

ch9

Student: _____

1. In the context of the Capital Asset Pricing Model (CAPM) the relevant measure of risk is
 - A. unique risk.
 - B. beta.
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

2. In the context of the Capital Asset Pricing Model (CAPM) the relevant risk is
 - A. unique risk.
 - B. systematic risk
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

3. In the context of the Capital Asset Pricing Model (CAPM) the relevant risk is
 - A. unique risk.
 - B. market risk
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

4. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
 - A. market risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.

5. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
 - A. beta risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.

6. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
- A. systematic risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.
7. The market portfolio has a beta of
- A. 0.
 - B. 1.
 - C. -1.
 - D. 0.5.
 - E. none of the above
8. The risk-free rate and the expected market rate of return are 0.06 and 0.12, respectively. According to the capital asset pricing model (CAPM), the expected rate of return on security X with a beta of 1.2 is equal to
- A. 0.06.
 - B. 0.144.
 - C. 0.12.
 - D. 0.132
 - E. 0.18
9. The risk-free rate and the expected market rate of return are 0.056 and 0.125, respectively. According to the capital asset pricing model (CAPM), the expected rate of return on a security with a beta of 1.25 is equal to
- A. 0.1225
 - B. 0.144.
 - C. 0.153.
 - D. 0.134
 - E. 0.117
10. Which statement is **not** true regarding the market portfolio?
- A. It includes all publicly traded financial assets.
 - B. It lies on the efficient frontier.
 - C. All securities in the market portfolio are held in proportion to their market values.
 - D. It is the tangency point between the capital market line and the indifference curve.
 - E. All of the above are true.
11. Which statement is true regarding the market portfolio?
- A. It includes all publicly traded financial assets.
 - B. It lies on the efficient frontier.
 - C. All securities in the market portfolio are held in proportion to their market values.
 - D. It is the tangency point between the capital market line and the indifference curve.
 - E. A, B, and C are true.

12. Which statement is **not** true regarding the Capital Market Line (CML)?
- A. The CML is the line from the risk-free rate through the market portfolio.
 - B. The CML is the best attainable capital allocation line.
 - C. The CML is also called the security market line.
 - D. The CML always has a positive slope.
 - E. The risk measure for the CML is standard deviation.
13. Which statement is true regarding the Capital Market Line (CML)?
- A. The CML is the line from the risk-free rate through the market portfolio.
 - B. The CML is the best attainable capital allocation line.
 - C. The CML is also called the security market line.
 - D. The CML always has a positive slope.
 - E. A, B, and D are true.
14. The market risk, beta, of a security is equal to
- A. the covariance between the security's return and the market return divided by the variance of the market's returns.
 - B. the covariance between the security and market returns divided by the standard deviation of the market's returns.
 - C. the variance of the security's returns divided by the covariance between the security and market returns.
 - D. the variance of the security's returns divided by the variance of the market's returns.
 - E. none of the above.
15. According to the Capital Asset Pricing Model (CAPM), the expected rate of return on any security is equal to
- A. $R_f + \beta [E(R_M)]$.
 - B. $R_f + \beta [E(R_M) - R_f]$.
 - C. $\beta [E(R_M) - R_f]$.
 - D. $E(R_M) + R_f$.
 - E. none of the above.
16. The Security Market Line (SML) is
- A. the line that describes the expected return-beta relationship for well-diversified portfolios only.
 - B. also called the Capital Allocation Line.
 - C. the line that is tangent to the efficient frontier of all risky assets.
 - D. the line that represents the expected return-beta relationship.
 - E. the line that represents the relationship between an individual security's return and the market's return.
17. According to the Capital Asset Pricing Model (CAPM), fairly priced securities
- A. have positive betas.
 - B. have zero alphas.
 - C. have negative betas.
 - D. have positive alphas.
 - E. none of the above.

18. According to the Capital Asset Pricing Model (CAPM), under priced securities
- A. have positive betas.
 - B. have zero alphas.
 - C. have negative betas.
 - D. have positive alphas.
 - E. none of the above.
19. According to the Capital Asset Pricing Model (CAPM), over priced securities
- A. have positive betas.
 - B. have zero alphas.
 - C. have negative betas.
 - D. have positive alphas.
 - E. none of the above.
20. According to the Capital Asset Pricing Model (CAPM),
- A. a security with a positive alpha is considered overpriced.
 - B. a security with a zero alpha is considered to be a good buy.
 - C. a security with a negative alpha is considered to be a good buy.
 - D. a security with a positive alpha is considered to be underpriced.
 - E. none of the above.
21. According to the Capital Asset Pricing Model (CAPM), which one of the following statements is **false**?
- A. The expected rate of return on a security decreases in direct proportion to a decrease in the risk-free rate.
 - B. The expected rate of return on a security increases as its beta increases.
 - C. A fairly priced security has an alpha of zero.
 - D. In equilibrium, all securities lie on the security market line.
 - E. All of the above statements are true.
22. In a well diversified portfolio
- A. market risk is negligible.
 - B. systematic risk is negligible.
 - C. unsystematic risk is negligible.
 - D. nondiversifiable risk is negligible.
 - E. none of the above.
23. Empirical results regarding betas estimated from historical data indicate that
- A. betas are constant over time.
 - B. betas of all securities are always greater than one.
 - C. betas are always near zero.
 - D. betas appear to regress toward one over time.
 - E. betas are always positive.

24. Your personal opinion is that a security has an expected rate of return of 0.11. It has a beta of 1.5. The risk-free rate is 0.05 and the market expected rate of return is 0.09. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
25. The risk-free rate is 7 percent. The expected market rate of return is 15 percent. If you expect a stock with a beta of 1.3 to offer a rate of return of 12 percent, you should
- A. buy the stock because it is overpriced.
 - B. sell short the stock because it is overpriced.
 - C. sell the stock short because it is underpriced.
 - D. buy the stock because it is underpriced.
 - E. none of the above, as the stock is fairly priced.
26. You invest \$600 in a security with a beta of 1.2 and \$400 in another security with a beta of 0.90. The beta of the resulting portfolio is
- A. 1.40
 - B. 1.00
 - C. 0.36
 - D. 1.08
 - E. 0.80
27. A security has an expected rate of return of 0.10 and a beta of 1.1. The market expected rate of return is 0.08 and the risk-free rate is 0.05. The alpha of the stock is
- A. 1.7%.
 - B. -1.7%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.
28. Your opinion is that CSCO has an expected rate of return of 0.13. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

29. Your opinion is that CSCO has an expected rate of return of 0.1375. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
30. Your opinion is that CSCO has an expected rate of return of 0.15. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
31. Your opinion is that Boeing has an expected rate of return of 0.112. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
32. Your opinion is that Boeing has an expected rate of return of 0.0952. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
33. Your opinion is that Boeing has an expected rate of return of 0.08. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

34. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 1.0 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 4
 - B. 7
 - C. 15
 - D. 11
 - E. 1
35. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 1.4 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 13.8
 - B. 7
 - C. 15
 - D. 4
 - E. 1.4
36. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 0.75 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 4
 - B. 9.25
 - C. 15
 - D. 11
 - E. 0.75
37. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 0.67 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 4
 - B. 8.69
 - C. 15
 - D. 11
 - E. 0.75

38. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 5 percent and the expected market rate of return is 10 percent. Your company has a beta of 0.67 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 10
 - B. 5
 - C. 8.35
 - D. 28.35
 - E. 0.67
39. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 10 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.
40. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 11 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.
41. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 13 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.
42. You invest 55% of your money in security A with a beta of 1.4 and the rest of your money in security B with a beta of 0.9. The beta of the resulting portfolio is
- A. 1.466
 - B. 1.157
 - C. 0.968
 - D. 1.082
 - E. 1.175

43. Given the following two stocks A and B

Security	Expected rate of return	Beta
A	0.12	1.2
B	0.14	1.8

If the expected market rate of return is 0.09 and the risk-free rate is 0.05, which security would be considered the better buy and why?

- A. A because it offers an expected excess return of 1.2%.
 - B. B because it offers an expected excess return of 1.8%.
 - C. A because it offers an expected excess return of 2.2%.
 - D. B because it offers an expected return of 14%.
 - E. B because it has a higher beta.
44. Capital Asset Pricing Theory asserts that portfolio returns are best explained by:
- A. economic factors.
 - B. specific risk.
 - C. systematic risk.
 - D. diversification.
 - E. none of the above.
45. According to the CAPM, the risk premium an investor expects to receive on any stock or portfolio increases:
- A. directly with alpha.
 - B. inversely with alpha.
 - C. directly with beta.
 - D. inversely with beta.
 - E. in proportion to its standard deviation.
46. What is the expected return of a zero-beta security?
- A. The market rate of return.
 - B. Zero rate of return.
 - C. A negative rate of return.
 - D. The risk-free rate.
 - E. None of the above.
47. Standard deviation and beta both measure risk, but they are different in that
- A. beta measures both systematic and unsystematic risk.
 - B. beta measures only systematic risk while standard deviation is a measure of total risk.
 - C. beta measures only unsystematic risk while standard deviation is a measure of total risk.
 - D. beta measures both systematic and unsystematic risk while standard deviation measures only systematic risk.
 - E. beta measures total risk while standard deviation measures only nonsystematic risk.

48. The expected return-beta relationship

- A. is the most familiar expression of the CAPM to practitioners.
- B. refers to the way in which the covariance between the returns on a stock and returns on the market measures the contribution of the stock to the variance of the market portfolio, which is beta.
- C. assumes that investors hold well-diversified portfolios.
- D. all of the above are true.
- E. none of the above are true.

49. The security market line (SML)

- A. can be portrayed graphically as the expected return-beta relationship.
- B. can be portrayed graphically as the expected return-standard deviation of market returns relationship.
- C. provides a benchmark for evaluation of investment performance.
- D. A and C.
- E. B and C.

50. Research by Jeremy Stein of MIT resolves the dispute over whether beta is a sufficient pricing factor by suggesting that managers should use beta to estimate

- A. long-term returns but not short-term returns.
- B. short-term returns but not long-term returns.
- C. both long- and short-term returns.
- D. book-to-market ratios.
- E. None of the above was suggested by Stein.

51. Studies of liquidity spreads in security markets have shown that

- A. liquid stocks earn higher returns than illiquid stocks.
- B. illiquid stocks earn higher returns than liquid stocks.
- C. both liquid and illiquid stocks earn the same returns.
- D. illiquid stocks are good investments for frequent, short-term traders.
- E. None of the above are true.

52. An underpriced security will plot

- A. on the Security Market Line.
- B. below the Security Market Line.
- C. above the Security Market Line.
- D. either above or below the Security Market Line depending on its covariance with the market.
- E. either above or below the Security Market Line depending on its standard deviation.

53. An overpriced security will plot

- A. on the Security Market Line.
- B. below the Security Market Line.
- C. above the Security Market Line.
- D. either above or below the Security Market Line depending on its covariance with the market.
- E. either above or below the Security Market Line depending on its standard deviation.

54. The risk premium on the market portfolio will be proportional to
- A. the average degree of risk aversion of the investor population.
 - B. the risk of the market portfolio as measured by its variance.
 - C. the risk of the market portfolio as measured by its beta.
 - D. both A and B are true.
 - E. both A and C are true.
55. In equilibrium, the marginal price of risk for a risky security must be
- A. equal to the marginal price of risk for the market portfolio.
 - B. greater than the marginal price of risk for the market portfolio.
 - C. less than the marginal price of risk for the market portfolio.
 - D. adjusted by its degree of nonsystematic risk.
 - E. none of the above are true.
56. The capital asset pricing model assumes
- A. all investors are price takers.
 - B. all investors have the same holding period.
 - C. investors pay taxes on capital gains.
 - D. both A and B are true.
 - E. A, B and C are all true.
57. The capital asset pricing model assumes
- A. all investors are price takers.
 - B. all investors have the same holding period.
 - C. investors have homogeneous expectations.
 - D. both A and B are true.
 - E. A, B and C are all true.
58. The capital asset pricing model assumes
- A. all investors are fully informed.
 - B. all investors are rational.
 - C. all investors are mean-variance optimizers.
 - D. taxes are an important consideration.
 - E. A, B and C are all true.
59. If investors do not know their investment horizons for certain
- A. the CAPM is no longer valid.
 - B. the CAPM underlying assumptions are not violated.
 - C. the implications of the CAPM are not violated as long as investors' liquidity needs are not priced.
 - D. the implications of the CAPM are no longer useful.
 - E. none of the above are true.

60. The value of the market portfolio equals
- A. the sum of the values of all equity securities.
 - B. the sum of the values of all equity and fixed income securities.
 - C. the sum the values of all equity, fixed income, and derivative securities.
 - D. the sum of the values of all equity, fixed income, and derivative securities plus the value of all mutual funds.
 - E. the entire wealth of the economy.
61. The amount that an investor allocates to the market portfolio is negatively related to
- I) the expected return on the market portfolio.
 - II) the investor's risk aversion coefficient.
 - III) the risk-free rate of return.
 - IV) the variance of the market portfolio
- A. I and II
 - B. II and III
 - C. II and IV
 - D. II, III, and IV
 - E. I, III, and IV
62. One of the assumptions of the CAPM is that investors exhibit myopic behavior. What does this mean?
- A. They plan for one identical holding period.
 - B. They are price-takers who can't affect market prices through their trades.
 - C. They are mean-variance optimizers.
 - D. They have the same economic view of the world.
 - E. They pay no taxes or transactions costs.
63. The CAPM applies to
- A. portfolios of securities only.
 - B. individual securities only.
 - C. efficient portfolios of securities only.
 - D. efficient portfolios and efficient individual securities only.
 - E. all portfolios and individual securities.
64. Which of the following statements about the mutual fund theorem is true?
- I) It is similar to the separation property.
 - II) It implies that a passive investment strategy can be efficient.
 - III) It implies that efficient portfolios can be formed only through active strategies.
 - IV) It means that professional managers have superior security selection strategies.
- A. I and IV
 - B. I, II, and IV
 - C. I and II
 - D. III and IV
 - E. II and IV

65. The expected return - beta relationship of the CAPM is graphically represented by
- A. the security market line.
 - B. the capital market line.
 - C. the capital allocation line.
 - D. the efficient frontier with a risk-free asset.
 - E. the efficient frontier without a risk-free asset.
66. A "fairly priced" asset lies
- A. above the security market line.
 - B. on the security market line.
 - C. on the capital market line.
 - D. above the capital market line.
 - E. below the security market line.
67. For the CAPM that examines illiquidity premiums, if there is correlation among assets due to common systematic risk factors, the illiquidity premium on asset i is a function of
- A. the market's volatility.
 - B. asset i 's volatility.
 - C. the trading costs of security i .
 - D. the risk-free rate.
 - E. the money supply.
68. Your opinion is that security A has an expected rate of return of 0.145. It has a beta of 1.5. The risk-free rate is 0.04 and the market expected rate of return is 0.11. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
69. Your opinion is that security C has an expected rate of return of 0.106. It has a beta of 1.1. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.
70. The risk-free rate is 4 percent. The expected market rate of return is 12 percent. If you expect stock X with a beta of 1.0 to offer a rate of return of 10 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

71. The risk-free rate is 5 percent. The expected market rate of return is 11 percent. If you expect stock X with a beta of 2.1 to offer a rate of return of 15 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.
72. You invest 50% of your money in security A with a beta of 1.6 and the rest of your money in security B with a beta of 0.7. The beta of the resulting portfolio is
- A. 1.40
 - B. 1.15
 - C. 0.36
 - D. 1.08
 - E. 0.80
73. You invest \$200 in security A with a beta of 1.4 and \$800 in security B with a beta of 0.3. The beta of the resulting portfolio is
- A. 1.40
 - B. 1.00
 - C. 0.52
 - D. 1.08
 - E. 0.80
74. Security A has an expected rate of return of 0.10 and a beta of 1.3. The market expected rate of return is 0.10 and the risk-free rate is 0.04. The alpha of the stock is
- A. 1.7%.
 - B. -1.8%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.
75. A security has an expected rate of return of 0.15 and a beta of 1.25. The market expected rate of return is 0.10 and the risk-free rate is 0.04. The alpha of the stock is
- A. 1.7%.
 - B. -1.7%.
 - C. 8.3%.
 - D. 3.5%.
 - E. none of the above.
76. A security has an expected rate of return of 0.13 and a beta of 2.1. The market expected rate of return is 0.09 and the risk-free rate is 0.045. The alpha of the stock is
- A. -0.95%.
 - B. -1.7%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.

77. Assume that a security is fairly priced and has an expected rate of return of 0.13. The market expected rate of return is 0.13 and the risk-free rate is 0.04. The beta of the stock is ____?
- A. 1.25
 - B. 1.7
 - C. 1
 - D. 0.95
 - E. none of the above.
78. Assume that a security is fairly priced and has an expected rate of return of 0.17. The market expected rate of return is 0.11 and the risk-free rate is 0.04. The beta of the stock is ____?
- A. 1.25
 - B. 1.86
 - C. 1
 - D. 0.95
 - E. none of the above.
79. Discuss the differences between the capital market line and the security market line.
80. Discuss the assumptions of the capital asset pricing model, and how these assumptions relate to the "real world" investment decision process.
81. Discuss the mutual fund theorem.

82. Discuss how the CAPM might be used in capital budgeting decisions and utility rate decisions.

83. List and discuss two of the assumptions of the CAPM.

ch9 Key

1. In the context of the Capital Asset Pricing Model (CAPM) the relevant measure of risk is
- A. unique risk.
 - B. beta.**
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

Once, a portfolio is diversified, the only risk remaining is systematic risk, which is measured by beta.

*Bodie - Chapter 09 #1
Difficulty: Easy*

2. In the context of the Capital Asset Pricing Model (CAPM) the relevant risk is
- A. unique risk.
 - B. systematic risk**
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

Once, a portfolio is diversified, the only risk remaining is systematic risk, which is measured by beta.

*Bodie - Chapter 09 #2
Difficulty: Easy*

3. In the context of the Capital Asset Pricing Model (CAPM) the relevant risk is
- A. unique risk.
 - B. market risk**
 - C. standard deviation of returns.
 - D. variance of returns.
 - E. none of the above.

Once, a portfolio is diversified, the only risk remaining is systematic risk, which is measured by beta.

*Bodie - Chapter 09 #3
Difficulty: Easy*

4. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
- A. market risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.

With a diversified portfolio, the only risk remaining is market, or systematic, risk. This is the only risk that influences return according to the CAPM.

*Bodie - Chapter 09 #4
Difficulty: Easy*

5. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
- A. beta risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.

With a diversified portfolio, the only risk remaining is market, beta, or systematic, risk. This is the only risk that influences return according to the CAPM.

*Bodie - Chapter 09 #5
Difficulty: Easy*

6. According to the Capital Asset Pricing Model (CAPM) a well diversified portfolio's rate of return is a function of
- A. systematic risk
 - B. unsystematic risk
 - C. unique risk.
 - D. reinvestment risk.
 - E. none of the above.

With a diversified portfolio, the only risk remaining is market, beta, or systematic, risk. This is the only risk that influences return according to the CAPM.

*Bodie - Chapter 09 #6
Difficulty: Easy*

7. The market portfolio has a beta of

- A. 0.
- B. 1.**
- C. -1.
- D. 0.5.
- E. none of the above

By definition, the beta of the market portfolio is 1.

*Bodie - Chapter 09 #7
Difficulty: Easy*

8. The risk-free rate and the expected market rate of return are 0.06 and 0.12, respectively. According to the capital asset pricing model (CAPM), the expected rate of return on security X with a beta of 1.2 is equal to

- A. 0.06.
- B. 0.144.
- C. 0.12.
- D. 0.132**
- E. 0.18

$$E(R) = 6\% + 1.2(12 - 6) = 13.2\%.$$

*Bodie - Chapter 09 #8
Difficulty: Easy*

9. The risk-free rate and the expected market rate of return are 0.056 and 0.125, respectively. According to the capital asset pricing model (CAPM), the expected rate of return on a security with a beta of 1.25 is equal to

- A. 0.1225**
- B. 0.144.
- C. 0.153.
- D. 0.134
- E. 0.117

$$E(R) = 5.6\% + 1.25(12.5 - 5.6) = 14.225\%.$$

*Bodie - Chapter 09 #9
Difficulty: Easy*

10. Which statement is **not** true regarding the market portfolio?

- A. It includes all publicly traded financial assets.
- B. It lies on the efficient frontier.
- C. All securities in the market portfolio are held in proportion to their market values.
- D.** It is the tangency point between the capital market line and the indifference curve.
- E. All of the above are true.

The tangency point between the capital market line and the indifference curve is the optimal portfolio for a particular investor.

*Bodie - Chapter 09 #10
Difficulty: Moderate*

11. Which statement is true regarding the market portfolio?

- A. It includes all publicly traded financial assets.
- B. It lies on the efficient frontier.
- C. All securities in the market portfolio are held in proportion to their market values.
- D. It is the tangency point between the capital market line and the indifference curve.
- E.** A, B, and C are true.

The tangency point between the capital market line and the indifference curve is the optimal portfolio for a particular investor.

*Bodie - Chapter 09 #11
Difficulty: Moderate*

12. Which statement is **not** true regarding the Capital Market Line (CML)?

- A. The CML is the line from the risk-free rate through the market portfolio.
- B. The CML is the best attainable capital allocation line.
- C.** The CML is also called the security market line.
- D. The CML always has a positive slope.
- E. The risk measure for the CML is standard deviation.

Both the Capital Market Line and the Security Market Line depict risk/return relationships. However, the risk measure for the CML is standard deviation and the risk measure for the SML is beta (thus C is not true; the other statements are true).

*Bodie - Chapter 09 #12
Difficulty: Moderate*

13. Which statement is true regarding the Capital Market Line (CML)?

- A. The CML is the line from the risk-free rate through the market portfolio.
- B. The CML is the best attainable capital allocation line.
- C. The CML is also called the security market line.
- D. The CML always has a positive slope.
- E. A, B, and D are true.**

Both the Capital Market Line and the Security Market Line depict risk/return relationships. However, the risk measure for the CML is standard deviation and the risk measure for the SML is beta (thus C is not true; the other statements are true).

*Bodie - Chapter 09 #13
Difficulty: Moderate*

14. The market risk, beta, of a security is equal to

- A. the covariance between the security's return and the market return divided by the variance of the market's returns.**
- B. the covariance between the security and market returns divided by the standard deviation of the market's returns.
- C. the variance of the security's returns divided by the covariance between the security and market returns.
- D. the variance of the security's returns divided by the variance of the market's returns.
- E. none of the above.

Beta is a measure of how a security's return covaries with the market returns, normalized by the market variance.

*Bodie - Chapter 09 #14
Difficulty: Moderate*

15. According to the Capital Asset Pricing Model (CAPM), the expected rate of return on any security is equal to

- A. $R_f + \beta [E(R_M)]$.
- B. $R_f + \beta [E(R_M) - R_f]$.**
- C. $\beta [E(R_M) - R_f]$.
- D. $E(R_M) + R_f$.
- E. none of the above.

The expected rate of return on any security is equal to the risk free rate plus the systematic risk of the security (beta) times the market risk premium, $E(R_M - R_f)$.

*Bodie - Chapter 09 #15
Difficulty: Moderate*

16. The Security Market Line (SML) is
- A. the line that describes the expected return-beta relationship for well-diversified portfolios only.
 - B. also called the Capital Allocation Line.
 - C. the line that is tangent to the efficient frontier of all risky assets.
 - D.** the line that represents the expected return-beta relationship.
 - E. the line that represents the relationship between an individual security's return and the market's return.

The SML is a measure of expected return per unit of risk, where risk is defined as beta (systematic risk).

*Bodie - Chapter 09 #16
Difficulty: Moderate*

17. According to the Capital Asset Pricing Model (CAPM), fairly priced securities
- A. have positive betas.
 - B.** have zero alphas.
 - C. have negative betas.
 - D. have positive alphas.
 - E. none of the above.

A zero alpha results when the security is in equilibrium (fairly priced for the level of risk).

*Bodie - Chapter 09 #17
Difficulty: Moderate*

18. According to the Capital Asset Pricing Model (CAPM), under priced securities
- A. have positive betas.
 - B. have zero alphas.
 - C. have negative betas.
 - D.** have positive alphas.
 - E. none of the above.

According to the Capital Asset Pricing Model (CAPM), under priced securities have positive alphas.

*Bodie - Chapter 09 #18
Difficulty: Moderate*

19. According to the Capital Asset Pricing Model (CAPM), over priced securities
- A. have positive betas.
 - B. have zero alphas.
 - C.** have negative betas.
 - D. have positive alphas.
 - E. none of the above.

According to the Capital Asset Pricing Model (CAPM), over priced securities have negative alphas.

*Bodie - Chapter 09 #19
Difficulty: Moderate*

20. According to the Capital Asset Pricing Model (CAPM),
- A. a security with a positive alpha is considered overpriced.
 - B. a security with a zero alpha is considered to be a good buy.
 - C. a security with a negative alpha is considered to be a good buy.
 - D.** a security with a positive alpha is considered to be underpriced.
 - E. none of the above.

A security with a positive alpha is one that is expected to yield an abnormal positive rate of return, based on the perceived risk of the security, and thus is underpriced.

*Bodie - Chapter 09 #20
Difficulty: Moderate*

21. According to the Capital Asset Pricing Model (CAPM), which one of the following statements is **false**?
- A.** The expected rate of return on a security decreases in direct proportion to a decrease in the risk-free rate.
 - B. The expected rate of return on a security increases as its beta increases.
 - C. A fairly priced security has an alpha of zero.
 - D. In equilibrium, all securities lie on the security market line.
 - E. All of the above statements are true.

Statements B, C, and D are true, but statement A is false.

*Bodie - Chapter 09 #21
Difficulty: Moderate*

22. In a well diversified portfolio
- A. market risk is negligible.
 - B. systematic risk is negligible.
 - C.** unsystematic risk is negligible.
 - D. nondiversifiable risk is negligible.
 - E. none of the above.

Market, or systematic, or nondiversifiable, risk is present in a diversified portfolio; the unsystematic risk has been eliminated.

*Bodie - Chapter 09 #22
Difficulty: Moderate*

23. Empirical results regarding betas estimated from historical data indicate that
- A. betas are constant over time.
 - B. betas of all securities are always greater than one.
 - C. betas are always near zero.
 - D.** betas appear to regress toward one over time.
 - E. betas are always positive.

Betas vary over time, betas may be negative or less than one, betas are not always near zero; however, betas do appear to regress toward one over time.

*Bodie - Chapter 09 #23
Difficulty: Moderate*

24. Your personal opinion is that a security has an expected rate of return of 0.11. It has a beta of 1.5. The risk-free rate is 0.05 and the market expected rate of return is 0.09. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C.** fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$11\% = 5\% + 1.5(9\% - 5\%) = 11.0\%$; therefore, the security is fairly priced.

*Bodie - Chapter 09 #24
Difficulty: Moderate*

25. The risk-free rate is 7 percent. The expected market rate of return is 15 percent. If you expect a stock with a beta of 1.3 to offer a rate of return of 12 percent, you should
- A. buy the stock because it is overpriced.
 - B.** sell short the stock because it is overpriced.
 - C. sell the stock short because it is underpriced.
 - D. buy the stock because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

$12\% < 7\% + 1.3(15\% - 7\%) = 17.40\%$; therefore, stock is overpriced and should be shorted.

*Bodie - Chapter 09 #25
Difficulty: Moderate*

26. You invest \$600 in a security with a beta of 1.2 and \$400 in another security with a beta of 0.90. The beta of the resulting portfolio is
- A. 1.40
 - B. 1.00
 - C. 0.36
 - D. 1.08**
 - E. 0.80

$$0.6(1.2) + 0.4(0.90) = 1.08.$$

*Bodie - Chapter 09 #26
Difficulty: Moderate*

27. A security has an expected rate of return of 0.10 and a beta of 1.1. The market expected rate of return is 0.08 and the risk-free rate is 0.05. The alpha of the stock is
- A. 1.7%.**
 - B. -1.7%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.

$$10\% - [5\% + 1.1(8\% - 5\%)] = 1.7\%.$$

*Bodie - Chapter 09 #27
Difficulty: Moderate*

28. Your opinion is that CSCO has an expected rate of return of 0.13. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.**
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$$11.5\% - 4\% + 1.3(11.5\% - 4\%) = -2.25\%; \text{ therefore, the security is overpriced.}$$

*Bodie - Chapter 09 #28
Difficulty: Moderate*

29. Your opinion is that CSCO has an expected rate of return of 0.1375. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$13.75\% - 4\% + 1.3(11.5\% - 4\%) = 0.0\%$; therefore, the security is fairly priced.

*Bodie - Chapter 09 #29
Difficulty: Moderate*

30. Your opinion is that CSCO has an expected rate of return of 0.15. It has a beta of 1.3. The risk-free rate is 0.04 and the market expected rate of return is 0.115. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$15\% - 4\% + 1.3(11.5\% - 4\%) = 1.25\%$; therefore, the security is under priced.

*Bodie - Chapter 09 #30
Difficulty: Moderate*

31. Your opinion is that Boeing has an expected rate of return of 0.112. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$11.2\% - 4\% + 0.92(10\% - 4\%) = 1.68\%$; therefore, the security is under priced.

*Bodie - Chapter 09 #31
Difficulty: Moderate*

32. Your opinion is that Boeing has an expected rate of return of 0.0952. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.**
 - D. cannot be determined from data provided.
 - E. none of the above.

$9.52\% - 4\% + 0.92(10\% - 4\%) = 0.0\%$; therefore, the security is fairly priced.

*Bodie - Chapter 09 #32
Difficulty: Moderate*

33. Your opinion is that Boeing has an expected rate of return of 0.08. It has a beta of 0.92. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C. fairly priced.**
 - D. cannot be determined from data provided.
 - E. none of the above.

$8.0\% - 4\% + 0.92(10\% - 4\%) = -1.52\%$; therefore, the security is overpriced.

*Bodie - Chapter 09 #33
Difficulty: Moderate*

34. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 1.0 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 4
 - B. 7
 - C. 15
 - D. 11**
 - E. 1

The hurdle rate should be the required return from CAPM or $(R = 4\% + 1.0(11\% - 4\%) = 11\%$.

*Bodie - Chapter 09 #34
Difficulty: Moderate*

35. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 1.4 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.

A. 13.8
B. 7
C. 15
D. 4
E. 1.4

The hurdle rate should be the required return from CAPM or $(R = 4\% + 1.4(11\% - 4\%) = 11\%$.

*Bodie - Chapter 09 #35
Difficulty: Moderate*

36. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 0.75 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.

A. 4
B. 9.25
C. 15
D. 11
E. 0.75

The hurdle rate should be the required return from CAPM or $(R = 4\% + 0.75(11\% - 4\%) = 9.25\%$.

*Bodie - Chapter 09 #36
Difficulty: Moderate*

37. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 4 percent and the expected market rate of return is 11 percent. Your company has a beta of 0.67 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.

A. 4
B. 8.69
C. 15
D. 11
E. 0.75

The hurdle rate should be the required return from CAPM or $(R = 4\% + 0.67(11\% - 4\%) = 8.69\%$.

*Bodie - Chapter 09 #37
Difficulty: Moderate*

38. As a financial analyst, you are tasked with evaluating a capital budgeting project. You were instructed to use the IRR method and you need to determine an appropriate hurdle rate. The risk-free rate is 5 percent and the expected market rate of return is 10 percent. Your company has a beta of 0.67 and the project that you are evaluating is considered to have risk equal to the average project that the company has accepted in the past. According to CAPM, the appropriate hurdle rate would be _____%.
- A. 10
 - B. 5
 - C. 8.35**
 - D. 28.35
 - E. 0.67

The hurdle rate should be the required return from CAPM or $(R = 5\% + 0.67(10\% - 5\%) = 8.35\%$.

*Bodie - Chapter 09 #38
Difficulty: Moderate*

39. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 10 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.**
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

$10\% < 4\% + 1.0(11\% - 4\%) = 11.0\%$; therefore, stock is overpriced and should be shorted.

*Bodie - Chapter 09 #39
Difficulty: Moderate*

40. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 11 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.**

$11\% = 4\% + 1.0(11\% - 4\%) = 11.0\%$; therefore, stock is fairly priced.

*Bodie - Chapter 09 #40
Difficulty: Moderate*

41. The risk-free rate is 4 percent. The expected market rate of return is 11 percent. If you expect CAT with a beta of 1.0 to offer a rate of return of 13 percent, you should
- A. buy stock X because it is overpriced.
 - B. sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D.** buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

$13\% > 4\% + 1.0(11\% - 4\%) = 11.0\%$; therefore, stock is under priced.

*Bodie - Chapter 09 #41
Difficulty: Moderate*

42. You invest 55% of your money in security A with a beta of 1.4 and the rest of your money in security B with a beta of 0.9. The beta of the resulting portfolio is
- A. 1.466
 - B. 1.157
 - C. 0.968
 - D. 1.082
 - E.** 1.175

$0.55(1.4) + 0.45(0.90) = 1.175$.

*Bodie - Chapter 09 #42
Difficulty: Moderate*

43. Given the following two stocks A and B

Security	Expected rate of return	Beta
A	0.12	1.2
B	0.14	1.8

If the expected market rate of return is 0.09 and the risk-free rate is 0.05, which security would be considered the better buy and why?

- A. A because it offers an expected excess return of 1.2%.
- B. B because it offers an expected excess return of 1.8%.
- C.** A because it offers an expected excess return of 2.2%.
- D. B because it offers an expected return of 14%.
- E. B because it has a higher beta.

A's excess return is expected to be $12\% - [5\% + 1.2(9\% - 5\%)] = 2.2\%$. B's excess return is expected to be $14\% - [5\% + 1.8(9\% - 5\%)] = 1.8\%$.

*Bodie - Chapter 09 #43
Difficulty: Moderate*

44. Capital Asset Pricing Theory asserts that portfolio returns are best explained by:

- A. economic factors.
- B. specific risk.
- C.** systematic risk.
- D. diversification.
- E. none of the above.

The risk remaining in diversified portfolios is systematic risk; thus, portfolio returns are commensurate with systematic risk.

*Bodie - Chapter 09 #44
Difficulty: Easy*

45. According to the CAPM, the risk premium an investor expects to receive on any stock or portfolio increases:

- A. directly with alpha.
- B. inversely with alpha.
- C.** directly with beta.
- D. inversely with beta.
- E. in proportion to its standard deviation.

The market rewards systematic risk, which is measured by beta, and thus, the risk premium on a stock or portfolio varies directly with beta.

*Bodie - Chapter 09 #45
Difficulty: Easy*

46. What is the expected return of a zero-beta security?

- A. The market rate of return.
- B. Zero rate of return.
- C. A negative rate of return.
- D.** The risk-free rate.
- E. None of the above.

$$E(R_S) = r_f + 0(R_M - r_f) = r_f.$$

*Bodie - Chapter 09 #46
Difficulty: Moderate*

47. Standard deviation and beta both measure risk, but they are different in that
- A. beta measures both systematic and unsystematic risk.
 - B.** beta measures only systematic risk while standard deviation is a measure of total risk.
 - C. beta measures only unsystematic risk while standard deviation is a measure of total risk.
 - D. beta measures both systematic and unsystematic risk while standard deviation measures only systematic risk.
 - E. beta measures total risk while standard deviation measures only nonsystematic risk.

B is the only true statement.

*Bodie - Chapter 09 #47
Difficulty: Easy*

48. The expected return-beta relationship
- A. is the most familiar expression of the CAPM to practitioners.
 - B. refers to the way in which the covariance between the returns on a stock and returns on the market . measures the contribution of the stock to the variance of the market portfolio, which is beta.
 - C. assumes that investors hold well-diversified portfolios.
 - D.** all of the above are true.
 - E. none of the above are true.

Statements A, B and C all describe the expected return-beta relationship.

*Bodie - Chapter 09 #48
Difficulty: Moderate*

49. The security market line (SML)
- A. can be portrayed graphically as the expected return-beta relationship.
 - B. can be portrayed graphically as the expected return-standard deviation of market returns relationship.
 - C. provides a benchmark for evaluation of investment performance.
 - D.** A and C.
 - E. B and C.

The SML is a measure of expected return-beta (the CML is a measure of expected return-standard deviation of market returns). The SML provides the expected return-beta relationship for "fairly priced" securities; thus if a portfolio manager selects securities that are underpriced and produces a portfolio with a positive alpha, this portfolio manager would receive a positive evaluation.

*Bodie - Chapter 09 #49
Difficulty: Moderate*

50. Research by Jeremy Stein of MIT resolves the dispute over whether beta is a sufficient pricing factor by suggesting that managers should use beta to estimate
- A. long-term returns but not short-term returns.
 - B. short-term returns but not long-term returns.
 - C. both long- and short-term returns.
 - D. book-to-market ratios.
 - E. None of the above was suggested by Stein.

Stein's results suggest that managers should use beta to estimate long-term returns but not short-term returns.

*Bodie - Chapter 09 #50
Difficulty: Difficult*

51. Studies of liquidity spreads in security markets have shown that
- A. liquid stocks earn higher returns than illiquid stocks.
 - B. illiquid stocks earn higher returns than liquid stocks.
 - C. both liquid and illiquid stocks earn the same returns.
 - D. illiquid stocks are good investments for frequent, short-term traders.
 - E. None of the above are true.

Studies of liquidity spreads in security markets have shown that illiquid stocks earn higher returns than liquid stocks.

*Bodie - Chapter 09 #51
Difficulty: Difficult*

52. An underpriced security will plot
- A. on the Security Market Line.
 - B. below the Security Market Line.
 - C. above the Security Market Line.
 - D. either above or below the Security Market Line depending on its covariance with the market.
 - E. either above or below the Security Market Line depending on its standard deviation.

An underpriced security will have a higher expected return than the SML would predict; therefore it will plot above the SML.

*Bodie - Chapter 09 #52
Difficulty: Easy*

53. An overpriced security will plot
- A. on the Security Market Line.
 - B.** below the Security Market Line.
 - C. above the Security Market Line.
 - D. either above or below the Security Market Line depending on its covariance with the market.
 - E. either above or below the Security Market Line depending on its standard deviation.

An overpriced security will have a lower expected return than the SML would predict; therefore it will plot below the SML.

*Bodie - Chapter 09 #53
Difficulty: Easy*

54. The risk premium on the market portfolio will be proportional to
- A. the average degree of risk aversion of the investor population.
 - B. the risk of the market portfolio as measured by its variance.
 - C. the risk of the market portfolio as measured by its beta.
 - D.** both A and B are true.
 - E. both A and C are true.

The risk premium on the market portfolio is proportional to the average degree of risk aversion of the investor population and the risk of the market portfolio measured by its variance.

*Bodie - Chapter 09 #54
Difficulty: Moderate*

55. In equilibrium, the marginal price of risk for a risky security must be
- A.** equal to the marginal price of risk for the market portfolio.
 - B. greater than the marginal price of risk for the market portfolio.
 - C. less than the marginal price of risk for the market portfolio.
 - D. adjusted by its degree of nonsystematic risk.
 - E. none of the above are true.

In equilibrium, the marginal price of risk for a risky security must be equal to the marginal price of risk for the market. If not, investors will buy or sell the security until they are equal.

*Bodie - Chapter 09 #55
Difficulty: Moderate*

56. The capital asset pricing model assumes

- A. all investors are price takers.
- B. all investors have the same holding period.
- C. investors pay taxes on capital gains.
- D.** both A and B are true.
- E. A, B and C are all true.

The CAPM assumes that investors are price-takers with the same single holding period and that there are no taxes or transaction costs.

*Bodie - Chapter 09 #56
Difficulty: Easy*

57. The capital asset pricing model assumes

- A. all investors are price takers.
- B. all investors have the same holding period.
- C. investors have homogeneous expectations.
- D. both A and B are true.
- E.** A, B and C are all true.

The CAPM assumes that investors are price-takers with the same single holding period and that there are no taxes or transaction costs.

*Bodie - Chapter 09 #57
Difficulty: Easy*

58. The capital asset pricing model assumes

- A. all investors are fully informed.
- B. all investors are rational.
- C. all investors are mean-variance optimizers.
- D. taxes are an important consideration.
- E.** A, B and C are all true.

The CAPM assumes that investors are fully informed, rational, mean-variance optimizers.

*Bodie - Chapter 09 #58
Difficulty: Easy*

59. If investors do not know their investment horizons for certain
- A. the CAPM is no longer valid.
 - B. the CAPM underlying assumptions are not violated.
 - C.** the implications of the CAPM are not violated as long as investors' liquidity needs are not priced.
 - D. the implications of the CAPM are no longer useful.
 - E. none of the above are true.

This is discussed in the chapter's section about extensions to the CAPM. It examines what the consequences are when the assumptions are removed.

*Bodie - Chapter 09 #59
Difficulty: Moderate*

60. The value of the market portfolio equals
- A. the sum of the values of all equity securities.
 - B. the sum of the values of all equity and fixed income securities.
 - C. the sum the values of all equity, fixed income, and derivative securities.
 - D. the sum of the values of all equity, fixed income, and derivative securities plus the value of all mutual funds.
 - E.** the entire wealth of the economy.

The market portfolio includes all assets in existence.

*Bodie - Chapter 09 #60
Difficulty: Moderate*

61. The amount that an investor allocates to the market portfolio is negatively related to
- I) the expected return on the market portfolio.
 - II) the investor's risk aversion coefficient.
 - III) the risk-free rate of return.
 - IV) the variance of the market portfolio
- A. I and II
 - B. II and III
 - C. II and IV
 - D.** II, III, and IV
 - E. I, III, and IV

The optimal proportion is given by $y = (E(R_M) - r_f) / (.01 \times A \sigma_M^2)$. This amount will decrease as r_f , A , and σ_M^2 decrease.

*Bodie - Chapter 09 #61
Difficulty: Moderate*

62. One of the assumptions of the CAPM is that investors exhibit myopic behavior. What does this mean?

- A. They plan for one identical holding period.
- B. They are price-takers who can't affect market prices through their trades.
- C. They are mean-variance optimizers.
- D. They have the same economic view of the world.
- E. They pay no taxes or transactions costs.

Myopic behavior is shortsighted, with no concern for medium-term or long-term implications.

*Bodie - Chapter 09 #62
Difficulty: Moderate*

63. The CAPM applies to

- A. portfolios of securities only.
- B. individual securities only.
- C. efficient portfolios of securities only.
- D. efficient portfolios and efficient individual securities only.
- E. all portfolios and individual securities.

The CAPM is an equilibrium model for all assets. Each asset's risk premium is a function of its beta coefficient and the risk premium on the market portfolio.

*Bodie - Chapter 09 #63
Difficulty: Moderate*

64. Which of the following statements about the mutual fund theorem is true?

- I) It is similar to the separation property.
- II) It implies that a passive investment strategy can be efficient.
- III) It implies that efficient portfolios can be formed only through active strategies.
- IV) It means that professional managers have superior security selection strategies.

- A. I and IV
- B. I, II, and IV
- C. I and II
- D. III and IV
- E. II and IV

The mutual fund theorem is similar to the separation property. The technical task of creating mutual funds can be delegated to professional managers; then individuals combine the mutual funds with risk-free assets according to their preferences. The passive strategy of investing in a market index fund is efficient.

*Bodie - Chapter 09 #64
Difficulty: Moderate*

65. The expected return - beta relationship of the CAPM is graphically represented by

- A.** the security market line.
- B. the capital market line.
- C. the capital allocation line.
- D. the efficient frontier with a risk-free asset.
- E. the efficient frontier without a risk-free asset.

The security market line shows expected return on the vertical axis and beta on the horizontal axis. It has an intercept of r_f and a slope of $E(R_M) - r_f$.

*Bodie - Chapter 09 #65
Difficulty: Easy*

66. A "fairly priced" asset lies

- A. above the security market line.
- B.** on the security market line.
- C. on the capital market line.
- D. above the capital market line.
- E. below the security market line.

Securities that lie on the SML earn exactly the expected return generated by the CAPM. Their prices are proportional to their beta coefficients and they have alphas equal to zero.

*Bodie - Chapter 09 #66
Difficulty: Easy*

67. For the CAPM that examines illiquidity premiums, if there is correlation among assets due to common systematic risk factors, the illiquidity premium on asset i is a function of

- A. the market's volatility.
- B. asset i 's volatility.
- C.** the trading costs of security i .
- D. the risk-free rate.
- E. the money supply.

The formula for this extension to the CAPM relaxes the assumption that trading is costless.

*Bodie - Chapter 09 #67
Difficulty: Moderate*

68. Your opinion is that security A has an expected rate of return of 0.145. It has a beta of 1.5. The risk-free rate is 0.04 and the market expected rate of return is 0.11. According to the Capital Asset Pricing Model, this security is
- A. underpriced.
 - B. overpriced.
 - C.** fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$14.5\% = 4\% + 1.5(11\% - 4\%) = 14.5\%$; therefore, the security is fairly priced.

*Bodie - Chapter 09 #68
Difficulty: Moderate*

69. Your opinion is that security C has an expected rate of return of 0.106. It has a beta of 1.1. The risk-free rate is 0.04 and the market expected rate of return is 0.10. According to the Capital Asset Pricing Model, this security is
- A.** underpriced.
 - B. overpriced.
 - C. fairly priced.
 - D. cannot be determined from data provided.
 - E. none of the above.

$4\% + 1.1(10\% - 4\%) = 10.6\%$; therefore, the security is fairly priced.

*Bodie - Chapter 09 #69
Difficulty: Moderate*

70. The risk-free rate is 4 percent. The expected market rate of return is 12 percent. If you expect stock X with a beta of 1.0 to offer a rate of return of 10 percent, you should
- A. buy stock X because it is overpriced.
 - B.** sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

$10\% < 4\% + 1.0(12\% - 4\%) = 12.0\%$; therefore, stock is overpriced and should be shorted.

*Bodie - Chapter 09 #70
Difficulty: Moderate*

71. The risk-free rate is 5 percent. The expected market rate of return is 11 percent. If you expect stock X with a beta of 2.1 to offer a rate of return of 15 percent, you should
- A. buy stock X because it is overpriced.
 - B.** sell short stock X because it is overpriced.
 - C. sell stock short X because it is underpriced.
 - D. buy stock X because it is underpriced.
 - E. none of the above, as the stock is fairly priced.

$15\% < 5\% + 2.1(11\% - 5\%) = 17.6\%$; therefore, stock is overpriced and should be shorted.

*Bodie - Chapter 09 #71
Difficulty: Moderate*

72. You invest 50% of your money in security A with a beta of 1.6 and the rest of your money in security B with a beta of 0.7. The beta of the resulting portfolio is
- A. 1.40
 - B.** 1.15
 - C. 0.36
 - D. 1.08
 - E. 0.80

$0.5(1.6) + 0.5(0.70) = 1.15.$

*Bodie - Chapter 09 #72
Difficulty: Moderate*

73. You invest \$200 in security A with a beta of 1.4 and \$800 in security B with a beta of 0.3. The beta of the resulting portfolio is
- A. 1.40
 - B. 1.00
 - C.** 0.52
 - D. 1.08
 - E. 0.80

$0.2(1.4) + 0.8(0.3) = 0.52.$

*Bodie - Chapter 09 #73
Difficulty: Moderate*

74. Security A has an expected rate of return of 0.10 and a beta of 1.3. The market expected rate of return is 0.10 and the risk-free rate is 0.04. The alpha of the stock is
- A. 1.7%.
 - B.** -1.8%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.

$$10\% - [4\% + 1.3(10\% - 4\%)] = -1.8\%.$$

*Bodie - Chapter 09 #74
Difficulty: Moderate*

75. A security has an expected rate of return of 0.15 and a beta of 1.25. The market expected rate of return is 0.10 and the risk-free rate is 0.04. The alpha of the stock is
- A. 1.7%.
 - B. -1.7%.
 - C. 8.3%.
 - D.** 3.5%.
 - E. none of the above.

$$15\% - [4\% + 1.25(10\% - 4\%)] = 3.5\%.$$

*Bodie - Chapter 09 #75
Difficulty: Moderate*

76. A security has an expected rate of return of 0.13 and a beta of 2.1. The market expected rate of return is 0.09 and the risk-free rate is 0.045. The alpha of the stock is
- A.** -0.95%.
 - B. -1.7%.
 - C. 8.3%.
 - D. 5.5%.
 - E. none of the above.

$$13\% - [4.5\% + 2.1(9\% - 4.5\%)] = -0.95\%.$$

*Bodie - Chapter 09 #76
Difficulty: Moderate*

77. Assume that a security is fairly priced and has an expected rate of return of 0.13. The market expected rate of return is 0.13 and the risk-free rate is 0.04. The beta of the stock is ____?
- A. 1.25
 - B. 1.7
 - C. 1**
 - D. 0.95
 - E. none of the above.

$$13\% = [4\% + \beta(13\% - 4\%)]; 9\% = \beta(9\%); \beta = 1.$$

*Bodie - Chapter 09 #77
Difficulty: Moderate*

78. Assume that a security is fairly priced and has an expected rate of return of 0.17. The market expected rate of return is 0.11 and the risk-free rate is 0.04. The beta of the stock is ____?
- A. 1.25
 - B. 1.86**
 - C. 1
 - D. 0.95
 - E. none of the above.

$$17\% = [4\% + \beta(11\% - 4\%)]; 13\% = \beta(7\%); \beta = 1.86$$

*Bodie - Chapter 09 #78
Difficulty: Moderate*

79. Discuss the differences between the capital market line and the security market line.

The capital market line measures the excess return (return of the portfolio over the risk-free return) per unit of total risk, as measured by standard deviation. The CML applies to efficient portfolios only. The security market line measures the excess returns of a portfolio or a security per unit of systematic risk (beta). The SML applies to individual securities and to all portfolios (whether efficiently diversified or not). Thus, the SML has much general applications than the CML and is more broadly used. The SML is frequently used to evaluate the performance of portfolio managers.

Feedback: The rationale of this question is to determine whether the students understand the basic differences between these two common risk/return relationships resulting from the capital asset pricing model.

*Bodie - Chapter 09 #79
Difficulty: Moderate*

80. Discuss the assumptions of the capital asset pricing model, and how these assumptions relate to the "real world" investment decision process.

The assumptions are:

(a) The market is composed of many small investors, who are price-takers; i. e., perfect competition. In reality this assumption was fairly realistic until recent years when institutional investors increasingly began to influence the market with their large transactions, especially those transactions via program trading. Since the 1987 market crash, circuit breakers on program trading have been enacted and market volatility has decreased somewhat.

(b) All investors have the same holding period. Obviously, different investors have different goals, and thus have different holding periods.

(c) Investments are limited to those that are publicly traded. In addition, it is assumed that investors may borrow or lend any amount at a fixed, risk-free rate. Obviously, investors may purchase assets that are not publicly traded; however, the dollar volume of publicly traded assets is considerable. The assumption that investors can borrow or lend any amount at a fixed, risk-free rate obviously is false. However, the model can be modified to incorporate different borrowing and lending rates.

(d) Investors pay no taxes on returns and incur no transaction costs. Obviously, investors do pay taxes and do incur transaction costs. The tax differentials across different types of investment income and across different income levels have been lessened as a result of the income tax simplification of 1986. Obviously, investors should consider after-tax, not before-tax, returns; however, the no-tax assumption of the model is not a serious departure from reality. In addition, any investment vehicle should stand on its own merits, not its tax status (again, less of a problem with the tax simplification of 1986).

Compared to other investment alternatives, such as real estate, transaction costs for securities are relatively low, unless the investor is an active trader. The active trader should be sure that he or she is not trading himself/herself out of a profit situation and into a loss situation and making profits for the broker. In general, these assumptions are not serious violations of "real world" scenarios.

(e) All investors are mean-variance efficient. This assumption implies that all investors make decisions based on maximizing returns available at an acceptable risk level; most investors probably make decisions in this manner. However, some investors are pure wealth maximizers (regardless of the risk level); and other investors are so risk averse that avoiding risk is their only goal.

(f) All investors have homogeneous expectations, meaning that given the same data all investors would process the data in the same manner, resulting in the same risk/return assessments for all investment alternatives. Obviously, we do not have homogenous expectations; one only has to read the differing recommendations of various analysts to realize that we have heterogeneous expectations. However, modeling heterogeneous expectations would require multiple, specific models; the homogenous expectations assumption allows the development of a generalized model, the CAPM.

Feedback: This question was designed to determine the student's understanding of the implications of the assumptions of the CAPM and requires the student to integrate much of the information introduced in the course to date and to integrate basic knowledge from economics principles courses.

81. Discuss the mutual fund theorem.

The mutual fund theorem is based on the concept that investors may obtain an efficient portfolio by holding the market (investing in an S&P 500 index fund, for example). The investor may adjust his or her holdings to the appropriate risk level by combining this investment with investment in risk-free instruments. Thus, the investor is separating the investment decision from the financing decision (separation theorem). Using this approach the investor may have an efficient passive investment strategy.

Feedback: This question tests the student's understanding of one of the fundamental results of the CAPM.

*Bodie - Chapter 09 #81
Difficulty: Easy*

82. Discuss how the CAPM might be used in capital budgeting decisions and utility rate decisions.

The CAPM can be used to establish a hurdle rate for capital budgeting projects, based on the projects' beta coefficients. For utility rate cases, the CAPM can be used to determine the fair rate of return for the utilities' stockholders. Utility rates can then be set to target these returns.

Feedback: This question tests the student's awareness of the general nature of the CAPM and the diversity of its applications.

*Bodie - Chapter 09 #82
Difficulty: Moderate*

83. List and discuss two of the assumptions of the CAPM.

Assumptions are 1) there are many investors, none of whom can have an impact on market prices, 2) investors are single-period planners with myopic behavior, 3) investments are limited to a universe of publicly traded financial assets and risk-free borrowing and lending, 4) there are no taxes or transactions costs, 5) all investors are rational mean-variance optimizers who use the Markowitz model for portfolio selection, and 6) all investors share the same economic view of the world. Students may discuss these items as presented in the chapter or expand the discussion.

Feedback: The question gives the student some flexibility in choosing which assumptions to discuss.

*Bodie - Chapter 09 #83
Difficulty: Moderate*

ch9 Summary

<u>Category</u>	<u># of Questions</u>
Bodie - Chapter 09	83
Difficulty: Difficult	3
Difficulty: Easy	20
Difficulty: Moderate	60