

**Exercise 1: Building a Portfolio**

- 1. What is the expected return on the market portfolio?
- 2. What is the expected return on the risk-free rate?
- 3. What is the expected return on the portfolio of the market portfolio and the risk-free rate?
- 4. What is the standard deviation of the portfolio of the market portfolio and the risk-free rate?
- 5. What is the correlation coefficient between the market portfolio and the portfolio of the market portfolio and the risk-free rate?
- 6. What is the beta of the portfolio of the market portfolio and the risk-free rate?
- 7. What is the alpha of the portfolio of the market portfolio and the risk-free rate?
- 8. What is the risk premium of the portfolio of the market portfolio and the risk-free rate?
- 9. What is the Sharpe ratio of the portfolio of the market portfolio and the risk-free rate?
- 10. What is the Treynor ratio of the portfolio of the market portfolio and the risk-free rate?