1. What is the relationship of the portfolio standard deviation to the weighted average of the standard deviation of the component assets?
2. Steady Growth Industries has never missed a dividend payment in its 94-year history. Does this make it more attractive to you as a possible purchase for your stock portfolio?
3. If markets are efficient, what should be the correlation coefficient between stock returns for two nonoverlapping time periods?
4. In forming a portfolio of two risky assets, what must be true of the correlation coefficient between their returns if there are to be gains from diversification? Explain
5. Explain the concept of Efficient Market Hypothesis. Additionally, explain its semistrong form and discuss the degree to which existing empirical evidence supports this form.
6. If a firm borrows $25 million for 1 year at an interest rate of 7%, what is the Present Value of the Interest Tax Shield? Assume a 35% tax rate.
7. Stock A has a beta of 1.20 and Stock B has a beta of 0.8. Suppose rf = 2% and rm = 12%.
   1. According to the CAPM, what are the expected returns for each stock?
   2. What is the expected return of an equally weighted portfolio of these two stocks?
   3. What is the beta of an equally weighted portfolio of these two stocks?
8. Suppose the market premium is 9%, market volatility is 30% and the risk-free rate is 3%.
   1. Suppose a security has a beta of 0.6. According to the CAPM, what is the expected return?
   2. A security has a volatility of 60% and a correlation with the market portfolio of 25%. According to the CAPM, what is its expected return?
   3. A security has a volatility of 80% and a correlation with the market portfolio of - 25%. According to the CAPM, what is the expected return?
9. Coalition Insurance sells fire insurance policies to local homeowners. The premium is

$110, the probability of fire is 0.001, and in the event of fire, the insured damages (the payout of the policy) will be $100,000. This problem is intentionally designed to be a little more challenging and outside the box, but well within your capabilities.

* 1. What is the two possible payouts on the policy with the probability of each?
  2. Suppose you own the entire firm, and the company issues only one policy. What are your expected value [i.e. E(r)] and standard deviation of your profit?
  3. Now suppose your company issues two policies. The risk of fire is independent across the two policies. What are the three possible payouts along with their associated probabilities?
  4. What are the expected value and standard deviation of your profit?
  5. Did risk pooling increase or decrease the standard deviation of your profit?
  6. Continue to assume the company has issued two policies, but now assume you take on a partner, so that each of you own one-half of the firm. Make a table of your share of the possible payouts the company may have to make on the two policies, along with their associated probabilities.
  7. What are the expected value and standard deviation of your profit?
  8. What happened to your risk? What happened to your profit?