Chapter Seventeen Exercises

1. Some new MBAs have just incorporated and raised $10 million by selling stock. What will the beta of this stock be if they
   a. buy $10 million of assets with a beta of 1.2?
   b. buy $8 million of assets with a beta of 1.2 and invest $2 million in Treasury-bills?
   c. borrow $4 million and buy $14 million of assets with a beta of 1.2?

2. A study of the determinants of price-earnings ratios asked 17 professional security analysts for the following data on 178 well-known stocks:
   P/E = price/normal earnings, adjusted for temporary events
   g = anticipated growth rate
   d = anticipated dividends/earnings
   b = beta coefficient
   After averaging these data, the following cross-section equation was estimated to explain the variation in price-earnings ratios among firms:
   $$P/E = 3.47 + 2.57g + 7.17d - 0.84b$$
   Interpret the coefficients of the three explanatory variables and identify which, if any, have "wrong" signs.

3. A and B are two companies, identical in all respects, except that A has no debt and B is 50 percent debt financed. For each of the following financial statistics, indicate whether you expect the value of the statistic to be higher for company A or B. Briefly (one sentence per statistic), explain your reasoning.
   a. expected return on assets
   b. standard deviation of return on stock
   c. beta coefficient of stock
   d. shareholder's required return on stock

4. Answer this student's question: "Isn't it inconsistent to measure risk by the standard deviation in mean-variance analysis and by the beta coefficient in the Capital Asset Pricing Model?"

5. Is there any portfolio that has a beta of 1 and an R-squared of 1, too?