Chapter Four Exercises

1. You want to invest $80,000 for one year but have only $20,000. You borrow an additional $60,000 at 10 percent, and owe $66,000 one year from now. What is the percentage return on your $20,000 if the rate of return earned on the entire $80,000 is 10 percent? Is 50 percent? Is –10 percent?

2. It was recently reported that a customer could rent a $1,000 television from Aaron's for $108.33/month. After 24 months, the customer owns the television. What is the implicit annual percentage interest rate?

3. A 1986 *Newsweek* article said of a 2.9 percent loan rate offered by General Motors and a 0 percent rate from American Motors,

   > Don't think this is a never-again opportunity. The American auto market is going to be flooded with new cars in the years ahead...there seems no way to avoid a market where there will be too many cars chasing too few passengers. So what will come next—a pitch featuring negative interest rates?

   How would a negative interest rate work? In particular, what would be your monthly payment on a 4-year amortized monthly loan of $10,000 at –5 percent? Is the total of the monthly payments more or less than $10,000?

4. "Insurance companies tend to be leveraged at between 10 and 20 to 1 for life companies and 4 or 5 to 1 for casualty companies." If you were asked to estimate the leverage ratio for a company, which of these data would you use and how: sales, before-tax profits, after-tax profits, assets, liabilities, net worth, or stock price?

5. Consider a conventional 30-year $100,000 mortgage at 10 percent with payments made monthly. If it cost 5 points to get this mortgage and there is a $5,000 repayment penalty, what is the annual percentage rate of return to the bank if the loan is paid off after five years?