Problem 1: While vacationing in Florida, Debbie saw the vacation home of her dreams. It was listed with a sale price of $250,000. The only catch is that Debbie is 35 years old and plans to continue working until she is 65. Still, she believes that prices generally increase at the overall rate of inflation. Debbie believes that she can earn 8% annually after taxes on her investment. She is willing to invest a fixed amount at the end of each of the next 30 years to fund the cash purchase of such a house (one that can be purchased today for $250,000) when she retires.

a. Inflation is expected to average 5% a year for the next 30 years. What will Debbie's dream house cost when she retires?
b. How much must Debbie invest at the end of each of the next 30 years in order to have the cash purchase price of the house when she retires?
c. If Debbie invests at the beginning instead of at the end of each of the next 30 years, how much must she invest each year?

Problem 2: Selyn Cohen is 63 years old and recently retired. He wishes to provide retirement income for himself and is considering an annuity contract with the Philo Life Insurance Company. Such a contract pays him an equal-dollar amount each year that he lives. For this cash-flow stream, he must put up a specific amount of money at the beginning. According to actuary tables, his life expectancy is 20 years, and that is the duration on which the insurance company bases its calculations regardless of how long he actually lives.

a. If Philo Life uses a compound annual interest rate of 5 percent in its calculations, what must Cohen pay at the outset for an annuity to provide him with $10,000 per year? (Assume that the expected annual payments are at the end of each of the 20 years.)
b. Without the insurance contract, Cohen had $30,000 to put into an account and expect for annuity payment. How much would he receive each year if the insurance company uses a 5 percent compound annual interest rate in its calculations?