

Section 6.2

1. Suppose that upon graduation you start a new job that pays \$60,000 annually. You have decided to take 15% of your salary each month and invest it. Write a function that describes your monthly investments under each of the following scenarios:
 - a) Your salary remains constant.
 - b) Your salary increases by \$120 a month.
 - c) Your salary increases by 0.4% each month.

2. Convert the three answers to problem 1 so that they describe your annual investments.

3. You hope to buy a house in 5 years. To save money for a down payment, suppose you begin investing \$300 per month in an annuity with a fixed rate of return of 7.1%. Assuming a continuous stream, how much will you have for the down payment at the end of 5 years?

4. Referring to example 3, how much would you have to invest now, in one lump sum instead of a continuous stream, in order to build to the same future value?

5. To prepare for your retirement in 40 years, you plan to invest 7% of your salary in your company-provided 401(k) plan. The investment plan you have chosen offers a fixed rate of return of 6.25%. Your current annual income is \$50,000, and you expect your income to increase by 2.5% per year. Assuming a continuous stream, what is your investment worth at the end of 40 years?

6. Referring to example 5, how much would you have to invest now, in one lump sum instead of a continuous stream, in order to have the same retirement nest egg in 40 years?

Section 6.3

- 1) Suppose the quantity demanded of TI-92 calculators (in thousands) is a function of price (in dollars) as given in the table. Approximate the amount consumers are willing and able to spend for 30,000 calculators.

Price (in \$)	180	200	225
Quantity (in thousands)	30	20	10

- 2) Suppose the Texas Instruments marketing department gathers data for additional prices as given in the table.

Price (in \$)	180	190	200	210	225	275
Quantity (in thousands)	30	25	20	15	10	5

- Approximate the amount consumers are willing and able to spend for 30,000 calculators.