68. An electrical circuit contains two resistors. The net resistance in the circuit is given by the product of the two individual resistances divided by their sum.
    a. Choose variables to represent the two given resistances. Write an algebraic expression for the net resistance in the circuit.
    b. Determine the net resistance if the two individual resistances are 10 and 20 ohms.
69. When a sum of money is invested in an interest-bearing account, the simple interest accumulated is given by the product of the original investment (called the principal), the interest rate, and the time in years that the money is invested. The sum of the principal and the interest is called the amount.
    a. Choose variables to represent the principal, the interest rate, and the time the money is invested. Write algebraic expressions for the interest and the amount.
    b. Determine the amount accumulated if \$800 is invested at 9% for 3 years.
70. The expansion in length that a section of highway will experience on a very hot day is given by a constant k times the length of the section of highway times the difference between the present temperature and the temperature when the highway was built.
    a. Choose variables to represent the length of a highway, the present temperature, and the temperature when the highway was built. Write an algebraic expression for the amount the highway will expand.
    b. Determine the amount that a 1000-foot section of highway will expand at 105°F if the highway was built at 65°F and the value of the constant is 0.000012.

1.2

SUMS AND DIFFERENCES

Factors and Terms

Algebraic expressions that are multiplied together are known as **factors**, while expressions that are added together are called **terms**. For example,

$3x + 4yz$ contains two terms; the first term, $3x$, contains two factors, and the second term, $4yz$, contains three factors;

$3(x - 4y^2)$ consists of a single term; however, the factor $x - 4y^2$ contains two terms, x and $-4y^2$.

The **numerical coefficient**, or simply **coefficient**, of a term is its numerical factor. For example,

the coefficient of x in the term $6x$ is 6;

the coefficient of a^2b in the term $-2a^2b$ is -2;

the coefficient of xy in the term xy is 1.