

Evaluate each expression for  $x = 10$ :

1)  $6 + 2x$

2)  $2(x + 6)$

Evaluate each algebraic expression for  $x = 3$  and  $y = 8$ :

3)  $7x + 2y$

4)  $\frac{6x-y}{27-x-8}$

Write each English phrase as an algebraic expression. Let the variable  $x$  represent the number.

5) the product of 6 and a number

6) a number added to 4

7) three times a number, increased by 5

8) twice a number subtracted from 12

9) the quotient of 15 and a number

Determine whether the given number is a solution of the equation.

10)  $9x - 3 = 42$ ; 6

11)  $2(y + 3) = 5y - 3$ ; 3

*Write each sentence as an equation. Let the variable  $x$  represent the number.*

12) The quotient of a number and 6 is 5.

13) Seven decreased by twice a number yields 1.

*Use the graph and mathematical models in Example 6 to answer the following questions.*

14) Use the appropriate formula from Example 6 to determine the percentage of marriages ending in divorce after 15 years when the wife is under 18 at the time of marriage.

15) Use the appropriate line graph in **Figure 1.1** to determine the percentage of marriages ending in divorce after 15 years when the wife is under 18 at the time of marriage.

16) Does the value given by the mathematical model underestimate or overestimate the actual percentage of marriages ending in divorce after 15 years as shown by the graph? By how much?