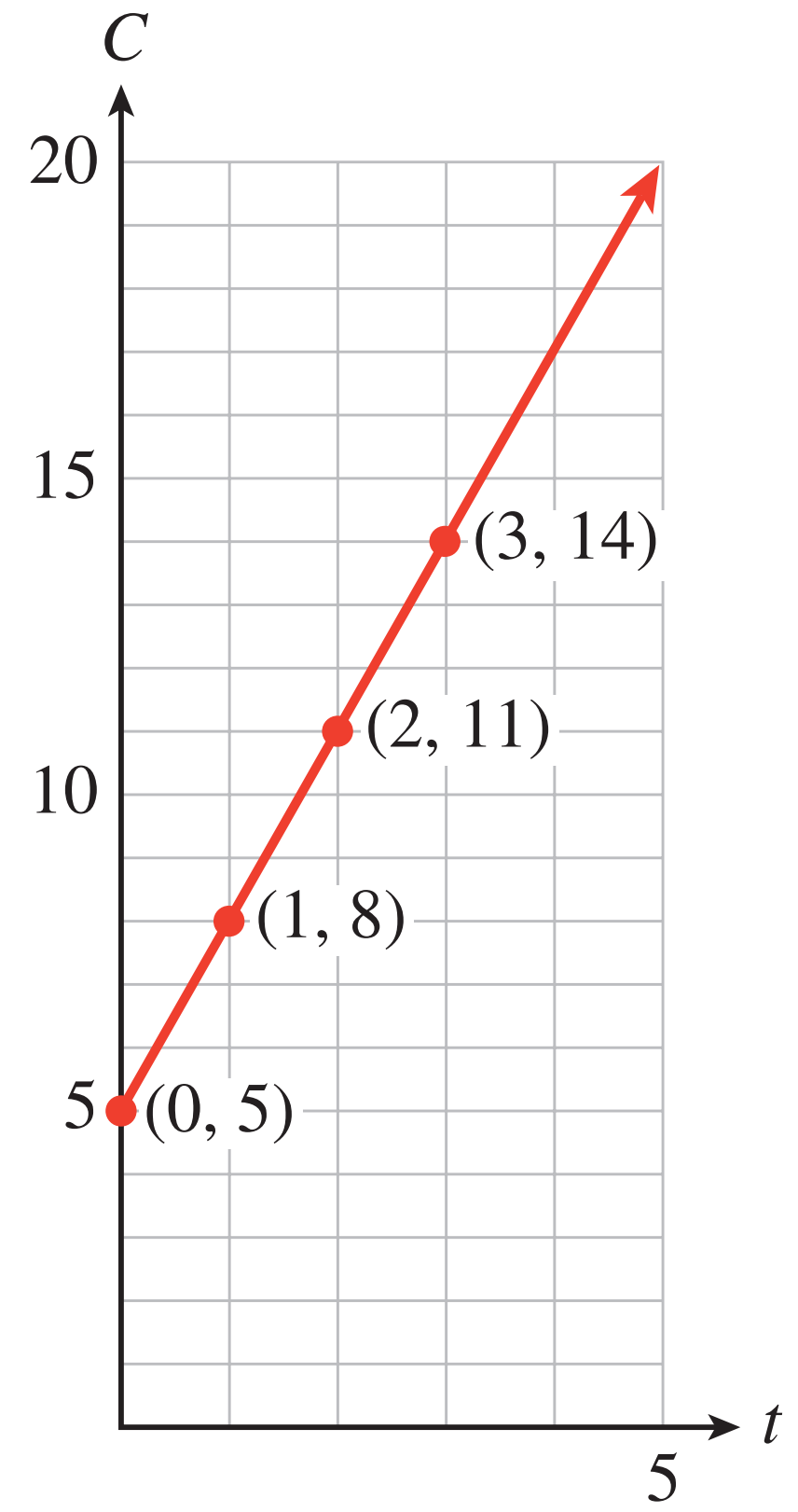

C
20
15
10
5
(3, 14)
(2, 11)
(1, 8)
(0, 5)
t
5

c. To find an equation, let C represent the cost of the rental, and use t for the number of hours:

$$\text{Cost} = (\$5 \text{ insurance fee}) + (\$3 \text{ per hour}) \times (\text{number of hours})$$
$$C = 5 + 3 \cdot t$$

EXAMPLE 2

Use the equation $C = 5 + 3t$ you found in Example 1 to answer the following questions. Then show how to find the answers by using the graph.

a. How much will it cost Annelise to rent a bicycle for 6 hours?

b. How long can Annelise bicycle for \$18.50?

Solutions

a. Substitute $t = 6$ into the expression for C to find

$$C = 5 + 3(6) = 23$$

A 6-hour bike ride will cost \$23. The point P on the graph in Figure 1.2 represents the cost of a 6-hour bike ride. The value on the C-axis at the same height as point P is 23, so a 6-hour bike ride costs \$23.

b. Substitute $C = 18.50$ into the equation and solve for t.

$$18.50 = 5 + 3t$$
$$13.50 = 3t$$
$$t = 4.5$$

For \$18.50, Annelise can bicycle for 4½ hours. The point Q on the graph represents an \$18.50 bike ride. The value on the t-axis below point Q is 4.5, so \$18.50 will buy a 4.5-hour bike ride.

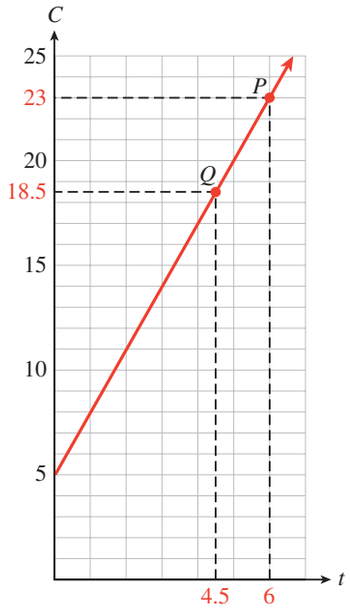


FIGURE 1.2

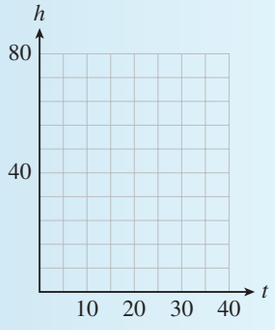
To review these algebraic techniques, see the Algebra Skills Refresher, A.2 and A.3.

In Example 2, notice the different algebraic techniques we used in parts (a) and (b). In part (a), we were given a value of t and we **evaluated the expression** $5 + 3t$ to find C. In part (b), we were given a value of C and we **solved the equation** $C = 5 + 3t$ to find t.

EXERCISE 1

Frank plants a dozen corn seedlings, each 6 inches tall. With plenty of water and sunlight they will grow approximately 2 inches per day. Complete the table of values for the height, h, of the seedlings after t days.

t	0	5	10	15	20
h					



a. Write an equation for the height, h, of the seedlings in terms of the number of days, t, since they were planted.

b. Graph the equation.