

**GUIDED PRACTICE** for Examples 2 and 3

5. **WHAT IF?** In Example 2, suppose that a hailstone forming in a cloud has a radius of 0.6 inch. Predict how long it has been forming.
6. **SHARKS** In Example 3, the respective body masses  $m$  (in kilograms) of the great white sharks are 80, 220, 375, 730, 1690, and 3195. Tell whether tooth length and body mass show direct variation. If so, write an equation that relates the quantities.

## 2.5 EXERCISES

**HOMWORK KEY**

= **WORKED-OUT SOLUTIONS**  
on p. WS1 for Exs. 5, 15, and 41

= **TAKS PRACTICE AND REASONING**  
Exs. 17, 30, 40, 44, 46, and 47

**SKILL PRACTICE**

1. **VOCABULARY** Define the constant of variation for two variables  $x$  and  $y$  that vary directly.
2. **WRITING** Given a table of ordered pairs  $(x, y)$ , describe how to determine whether  $x$  and  $y$  show direct variation.

**EXAMPLE 1**  
on p. 107  
for Exs. 3–10

**WRITING AND GRAPHING** Write and graph a direct variation equation that has the given ordered pair as a solution.

3. (2, 6)                      4. (-3, 12)                      5. (6, -21)                      6. (4, 10)
7. (-5, -1)                      8. (24, -8)                      9.  $(\frac{4}{3}, -4)$                       10. (12.5, 5)

**EXAMPLE 2**  
on p. 108  
for Exs. 11–17

**WRITING AND EVALUATING** The variables  $x$  and  $y$  vary directly. Write an equation that relates  $x$  and  $y$ . Then find  $y$  when  $x = 12$ .

11.  $x = 4, y = 8$                       12.  $x = -3, y = -5$                       13.  $x = 35, y = -7$
14.  $x = -18, y = 4$                       15.  $x = -4.8, y = -1.6$                       16.  $x = \frac{2}{3}, y = -10$

17. **TAKS REASONING** Which equation is a direct variation equation that has (3, 18) as a solution?

- (A)  $y = 2x^2$                       (B)  $y = \frac{1}{6}x$                       (C)  $y = 6x$                       (D)  $y = 4x + 6$

**IDENTIFYING DIRECT VARIATION** Tell whether the equation represents direct variation. If so, give the constant of variation.

18.  $y = -8x$                       19.  $y - 4 = 3x$                       20.  $3y - 7 = 10x$
21.  $2y - 5x = 0$                       22.  $5y = -4x$                       23.  $6y = x$

**WRITING AND SOLVING** The variables  $x$  and  $y$  vary directly. Write an equation that relates  $x$  and  $y$ . Then find  $x$  when  $y = -4$ .

24.  $x = 5, y = -15$                       25.  $x = -6, y = 8$                       26.  $x = -18, y = -2$
27.  $x = -12, y = 84$                       28.  $x = -\frac{20}{3}, y = -\frac{15}{8}$                       29.  $x = -0.5, y = 3.6$