2-2 **Practice**   *Form G*

Direct Variation

For each function, determine whether y varies directly with x. If so, find the constant of variation and write the function rule.

1.

x	y
−6	−2
9	3
21	7

2.

x	y
2	8
3	12
5	20

3.

x	y
7	56
11	22
16	32

Determine whether y varies directly with x. If so, find the constant of variation.

4. $y = \dfrac{4}{9}x$

5. $y = -1.2x$

6. $y + 4x = 0$

7. $y - 3x = 1$

8. $y = 3x$

9. $y + 2 = x$

For Exercises 10–13, y varies directly with x.

10. If $y = 3$ when $x = -9$, find x when $y = 5$.

11. If $y = -14$ when $x = -7$, find x when $y = 22$.

12. If $y = 5$ when $x = 8$, find x when $y = 2$.

13. If $y = 4$ when $x = 14$, find y when $x = -5$.

14. The distance a spring stretches varies directly with the amount of weight that is hanging on it. A weight of 2.5 pounds stretches a spring 18 inches. What is the stretch of the spring when a weight of 6.4 pounds is hanging on it?

15. The amount of lemon juice in a lemonade recipe varies directly with the amount of water. The recipe calls for 8 oz of lemon juice and 32 oz of water. How much lemon juice should you use if you start with 28 oz of water?

2-2 **Practice** (continued) *Form G*

Direct Variation

Make a table of x- and y-values and use it to graph the direct variation equation.

16. $y = \dfrac{1}{5}x$

17. $y = 2^3 x$

Write and graph a direct variation equation that passes through each point.

18. $(6, 2)$ **19.** $(-1.5, 9)$ **20.** $(-5, 90)$ **21.** $(7, 3)$

22. $\left(-1, -\dfrac{2}{3}\right)$ **23.** $\left(\dfrac{3}{5}, \dfrac{7}{2}\right)$ **24.** $(10, 25)$ **25.** $(3, 165)$

For Exercises 26–28, y varies directly with x.

26. If $y = 3$ when $x = 2$, find x when $y = 5$.

27. If $y = \dfrac{5}{17}$ when $x = 10$, find y when $x = 5$.

28. If $y = -4$ when $x = \dfrac{1}{2}$, find y when $x = \dfrac{2}{3}$.

29. A new hybrid car has a 12-gallon gas tank. On one tank of gas, the owner can drive 540 miles. The number of miles traveled varies directly with the number of gallons of gas the car uses.
    a. Write an equation that relates the number of miles traveled with the number of gallons of gas used.
    b. How many miles can the owner travel on 9 gallons of gas?

30. On a certain calling plan, a 15-minute long-distance phone call costs $.90. The cost varies directly with the length of the call. Write an equation that relates the cost to the length of the call. How long is a call that costs $1.32?