5-2

Practice

Form G

Direct Variation

Determine whether each equation represents a direct variation. If it does, find the constant of variation.

1. $-8y = 2x$

2. $3x + 4y = -5$

3. $12x = -36y$

4. $-7 + 9y + 7 = 2x$

5. $y - 12 = 12x$

6. $5x + 12.5y = 0$

Suppose *y* varies directly with *x*. Write a direct variation equation that relates *x* and *y*. Then find the value of *y* when *x* = 8.

7. $y = 10$ when $x = 2$.

8. $y = 6$ when $x = 18$.

9. $y = 2$ when $x = 5$.

10. $y = 9.92$ when $x = 12.8$.

11. $y = 1.85$ when $x = 0.925$.

12. $y = 1\frac{2}{9}$ when $x = 3\frac{2}{3}$.

Graph each direct variation equation.

13. $y = 5x$

14. $y = -\frac{2}{5}x$
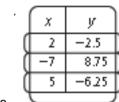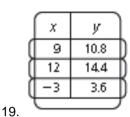
15. $y = \frac{3}{4}x$

16. An equilateral triangle is a triangle with three equal sides. The perimeter of an equilateral triangle varies directly with the length of one side. What is an equation that relates the perimeter *p* and length *l* of a side? What is the graph of the equation?

17. The amount *a* you fill a tub varies directly with the amount of time *t* you fill it. Suppose you fill 25 gallons in 5 minutes. What is an equation that relates *a* and *t*? What is the graph of the equation?
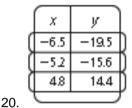
5-2 **Practice** (continued)
Direct Variation

For the data in each table, tell whether y varies directly with x. If it does, write an equation for the direct variation.

x	y
2	−2.5
−7	8.75
5	−6.25

18.

x	y
9	10.8
12	14.4
−3	3.6

19.

x	y
−6.5	−19.5
−5.2	−15.6
4.8	14.4

20.

Suppose y varies directly with x. Write and graph a direct variation equation that relates x and y.

21. $y = -6$ when $x = 3$.

22. $y = -\dfrac{4}{3}$ when $x = -4$.

23. $y = \dfrac{5}{8}$ when $x = \dfrac{1}{2}$.

Tell whether the two quantities vary directly. Explain your reasoning.

24. the total number of miles run and the number of miles you run per day when training for a race

25. Jackson's age and Dylan's age

26. a recipe that calls for 2 cups of sugar for each cup of flour

27. Writing In a direct variation equation, describe how the slope of the graph of the line is related to the constant of variation.

28. Janine gets paid $16.75 per hour at her job. Write a direct variation equation where h represents the number of hours she works and d represents the amount of money she earns. Graph the equation.