

Practice 2-3

Direct Variation

For each direct variation, find the constant of variation. Then find the value of y when $x = 3$.

1. $y = 3$ when $x = -2$ 2. $y = \frac{3}{4}$ when $x = \frac{1}{8}$ 3. $y = -\frac{3}{8}$ when $x = -\frac{2}{3}$

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

4. $y = \frac{4}{9}x$ 5. $y = -1.2x$ 6. $y + 4x = 0$ 7. $y - 3x = 1$
 8. $y = 3x$ 9. $y + 2 = x$ 10. $y - \frac{3}{5}x = 0$ 11. $y = -3.5x + 7$

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

12.

x	y
1	1
2	4
3	9

13.

x	y
-1	-3
1	3
3	9

14.

x	y
-2	-1
2	1
5	$\frac{5}{2}$

15.

x	y
-2	-3
0	1
1	3

Write an equation for a direct variation with a graph that passes through each point.

16. (6, 2) 17. (-1.5, 9) 18. (-5, 90) 19. (7, 3)
 20. $(-1, -\frac{2}{3})$ 21. $(\frac{3}{5}, -\frac{7}{2})$ 22. (10, 25) 23. (3, 165)

In Exercises 24–27, y varies directly as x .

24. If $y = 3$ when $x = 2$, find x when $y = 5$.
 25. If $y = -4$ when $x = \frac{1}{2}$, find y when $x = \frac{2}{3}$.
 26. If $y = -14$ when $x = -7$, find x when $y = 22$.
 27. If $y = \frac{5}{17}$ when $x = 10$, find y when $x = 5$.
 28. A 15-minute long-distance telephone call costs \$.90. The cost varies directly as 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?
 29. The distance a spring stretches varies directly as the amount of weight that is hanging on it. A weight of 2.5 pounds stretches a spring 18 inches. Find the stretch of the spring when a weight of 6.4 pounds is hanging on it.

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