

Practice 5-5

Direct Variation

Is each equation a direct variation? If it is, find the constant of variation.

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|-------------------|-----------------------|---------------------------|-------------------|
| 1. $y = 5x$ | 2. $8x + 2y = 0$ | 3. $y = \frac{3}{4}x - 7$ | 4. $y = 2x + 5$ |
| 5. $3x - y = 0$ | 6. $y = \frac{3}{5}x$ | 7. $-3x + 2y = 0$ | 8. $-5x + 2y = 9$ |
| 9. $8x + 4y = 12$ | 10. $6x - 3y = 0$ | 11. $x - 3y = 6$ | 12. $9x + 5y = 0$ |

The ordered pairs in each exercise are for the same direct variation. Find each missing value.

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|-----------------------------------|-------------------------|---------------------------|-------------------------|
| 13. (3, 2) and (6, y) | 14. (-2, 8) and (x, 12) | 15. (4, y) and (16, 12) | 16. (x, 8) and (6, -16) |
| 17. (3, y) and (9, 15) | 18. (2, y) and (10, 15) | 19. (-4, 3) and (x, 6) | 20. (3, y) and (1.5, 6) |
| 21. $(\frac{2}{3}, 2)$ and (x, 6) | 22. (2.5, 5) and (x, 9) | 23. (4.8, 5) and (2.4, y) | 24. (9, 3) and (x, -2) |

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

25.

x	y
4	8
7	14
10	20

26.

x	y
-3	-2
3	2
9	6

27.

x	y
4	3
5	4.5
11	13.5

28.

x	y
-2	-2.8
3	4.2
8	11.2

29. Charles's Law states that at constant pressure, the volume of a fixed amount of gas varies directly with its temperature measured in degrees Kelvin. A gas has a volume of 250 mL at 300° K.
- Write an equation for the relationship between volume and temperature.
 - What is the volume if the temperature increases to 420° K?
30. Your percent grade varies directly with the number of correct answers. You got a grade of 80 when you had 20 correct answers.
- Write an equation for the relationship between percent grade and number of correct answers.
 - What would your percent grade be with 24 correct answers?
31. The amount of simple interest earned in a savings account varies directly with the amount of money in the savings account. You have \$1000 in your savings account and earn \$50 in simple interest. How much interest would you earn if you had \$1500 in your savings account?