

Practice 9-1

Inverse Variation

Each ordered pair is from an inverse variation. Find the constant of variation.

1. $(3, \frac{1}{3})$ 2. (0.2, 6) 3. (10, 5) 4. $(\frac{5}{7}, \frac{2}{5})$ 5. (3.5, 1.2)

Suppose that x and y vary inversely. Write a function that models each inverse variation.

6. $x = 7$ when $y = 2$ 7. $x = 4$ when $y = 9$ 8. $x = -3$ when $y = 8$
 9. $x = 5$ when $y = -6$ 10. $x = 1$ when $y = 0.8$ 11. $x = -4$ when $y = -2$
 12. $x = \frac{3}{5}$ when $y = 5$ 13. $x = 3$ when $y = 2.1$ 14. $x = -\frac{1}{3}$ when $y = \frac{9}{10}$

Describe the combined variation that is modeled by each formula.

15. $I = \frac{120}{R}$ 16. $A = \frac{1}{2}bh$ 17. $h = \frac{3V}{B}$ 18. $V = \frac{4}{3}\pi r^3$

Each pair of values is from an inverse variation. Find the missing value.

19. (2, 4) and (6, y) 20. $(\frac{1}{3}, 6)$ and $(x, -\frac{1}{2})$ 21. (1.2, 4.5) and (2.7, y)

Suppose that x and y vary inversely. Write a function that models each inverse variation, and find y when $x = 8$.

22. $x = 4$ when $y = 2$ 23. $x = -3$ when $y = \frac{1}{3}$ 24. $x = 6$ when $y = 1.2$

Write the function that models each relationship. Find z when $x = 6$ and $y = 4$.

25. z varies jointly with x and y . When $x = 7$ and $y = 2$, $z = 28$.
 26. z varies directly with x and inversely with the cube of y . When $x = 8$ and $y = 2$, $z = 3$.

Is the relationship between the values in each table a direct variation, an inverse variation, or neither? Write equations to model the direct and inverse variations.

27.

x	2	4	5	20
y	10	5	4	1

28.

x	1	3	7	10
y	2	8	20	29

29.

x	1	2	5	7
y	6	12	30	42

30.

x	0.2	0.5	2	3
y	25	62.5	250	375

31.

x	0.1	0.5	1.5	2
y	31	7	3	2.5

32.

x	3	1.5	0.5	0.3
y	5	10	30	50

All rights reserved.

© Pearson Education, Inc., publishing as Pearson Prentice Hall.