

Direct and Inverse Variation

Determine whether the given equation represents a direct or inverse variation.

1) $xy = 15$

2) $y = \frac{9}{x}$

3) $y = \frac{13}{12x}$

4) $y = 13x$

5) $-5x + y = 0$

6) $y = 4x$

Find the constant of variation.

7) $y = 3x$

8) $xy = 7$

9) $\frac{y}{x} = 5$

10) $y = \frac{1}{9x}$

11) $y = \frac{3}{5}x$

12) $y = \frac{15}{x}$

Solve each problem involving direct or inverse variation.

13) If y varies directly as x , and $y = 6$ when $x = 15$, find y when $x = 2$.

14) If y varies inversely as x , and $y = 8$ when $x = 5$, find y when $x = 4$.

15) If y varies directly as x , and $y = 5$ when $x = 4$, find y when $x = 8$.

16) If y varies directly as x^2 , and $y = 10$ when $x = 2$, find y when $x = 3$.

17) If y varies inversely as x , and $y = 9$ when $x = 10$, find y when $x = 5$.

18) If y varies inversely as x , and $y = 4$ when $x = 12$, find y when $x = 2$.

19) If y varies inversely as x , and $y = 3$ when $x = 21$, find y when $x = 9$.

20) If y varies inversely as x^2 , and $y = \frac{11}{4}$ when $x = 4$, find y when $x = 2$.

21) If y varies directly as x , and $y = 10$ when $x = 20$, find y when $x = 3$.

22) If y varies directly as x , and $y = 4$ when $x = 6$, find y when $x = 5$.

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Determine whether the given equation represents a direct or inverse variation.

1) $xy = 15$

Inverse

2) $y = \frac{9}{x}$

Inverse

3) $y = \frac{13}{12x}$

Inverse

4) $y = 13x$

Direct

5) $-5x + y = 0$

Direct

6) $y = 4x$

Direct

Find the constant of variation.

7) $y = 3x$

3

8) $xy = 7$

7

9) $\frac{y}{x} = 5$

5

10) $y = \frac{1}{9x}$

$\frac{1}{9}$

11) $y = \frac{3}{5}x$

$\frac{3}{5}$

12) $y = \frac{15}{x}$

15

Solve each problem involving direct or inverse variation.

13) If y varies directly as x , and $y = 6$ when $x = 15$, find y when $x = 2$.

$$\frac{4}{5}$$

14) If y varies inversely as x , and $y = 8$ when $x = 5$, find y when $x = 4$.

$$10$$

15) If y varies directly as x , and $y = 5$ when $x = 4$, find y when $x = 8$.

$$10$$

16) If y varies directly as x^2 , and $y = 10$ when $x = 2$, find y when $x = 3$.

$$\frac{45}{2}$$

17) If y varies inversely as x , and $y = 9$ when $x = 10$, find y when $x = 5$.

$$18$$

18) If y varies inversely as x , and $y = 4$ when $x = 12$, find y when $x = 2$.

$$24$$

19) If y varies inversely as x , and $y = 3$ when $x = 21$, find y when $x = 9$.

$$7$$

20) If y varies inversely as x^2 , and $y = \frac{11}{4}$ when $x = 4$, find y when $x = 2$.

$$11$$

21) If y varies directly as x , and $y = 10$ when $x = 20$, find y when $x = 3$.

$$\frac{3}{2}$$

22) If y varies directly as x , and $y = 4$ when $x = 6$, find y when $x = 5$.

$$\frac{10}{3}$$