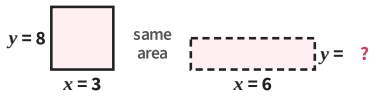
Inverse Proportion: y = k/x

1

y is inversely proportional to x. When $x = 3$, $y = 8$. Find y when $x = 6$.



Statement $y \propto \square$

Replace $\propto$ with $= k$ $y = \frac{k}{\square}$

Substitute $\frac{\square}{\square} = \frac{k}{\square}$

Find k $k = \square \times \square = \square$

Formula $y = \frac{\square}{x}$

Use it $y = \frac{\square}{\square}$

$y =$ _____

2

y is inversely proportional to x. When $x = 7$, $y = 5$. Find y when $x = 2$.



Statement $y \propto \frac{1}{x}$

Replace $\propto$ with $= k$ $y = \frac{k}{\square}$

Substitute $\frac{\square}{\square} = \frac{k}{\square}$

Find k $k = \square \times \square = \square$

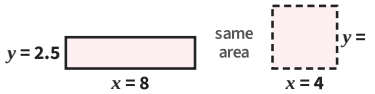
Formula $y = \frac{\square}{x}$

Use it $y = \frac{\square}{\square}$

$y =$ _____

3

y is inversely proportional to x. When $x = 8$, $y = 2.5$. Find y when $x = 4$.



Statement $y \propto \frac{1}{x}$

Replace $\propto$ with $= k$ $y = \frac{k}{\square}$

Substitute $\frac{\square}{\square} = \frac{k}{\square}$

Find k $k = \square \times \square = \square$

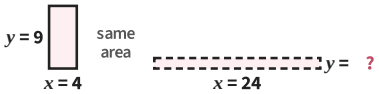
Formula $y = \frac{\square}{x}$

Use it $y = \frac{\square}{\square}$

$y =$ _____

4

y is inversely proportional to x. When $x = 4$, $y = 9$. Find y when $x = 24$.



Statement $y \propto \frac{1}{x}$

Replace $\propto$ with $= k$ $y = \frac{k}{\square}$

Substitute $\frac{\square}{\square} = \frac{k}{\square}$

Find k $k = \square \times \square = \square$

Formula $y = \frac{\square}{x}$

Use it $y = \frac{\square}{\square}$

$y =$ _____

5

P is inversely proportional to Q.
When $Q = 5$, $P = 12$. Find Q when $P = 4$.

Statement _____

Replace $\propto$ with $= k$ _____

Substitute _____

Find k _____

Formula _____

Use it _____

$Q =$ _____

6

The time, t hours, a phone battery lasts is inversely proportional to the power it uses, P watts. Using 2 watts it lasts 15 hours.

(a) Find a formula for t in terms of P.
(b) How long does it last using 2.5 watts?

_____

_____

_____

Answer _____

7

y is inversely proportional to x. When $x = 4$, $y = 10$. Ali writes $10 = \frac{k}{4}$, so $k = 10 \div 4 = 2.5$.

Explain Ali's mistake, then find y when $x = 5$.

_____

_____

$y =$ _____

8

y is inversely proportional to x.

Complete the table, then write y in terms of x.

x	2	5	
y	15		2.5

_____

Formula _____

Inverse Proportion: y = k/x *further practice*

9

y is inversely proportional to x.
When $x = 15$, $y = 1.2$. Find y when $x = 4$.

$y =$ _____

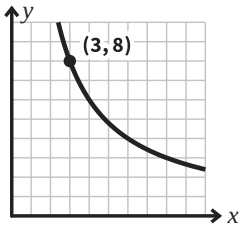
10

The number of days, d, a bag of bird seed lasts is inversely proportional to the number of birds, b, that feed on it.
It lasts 12 days for 20 birds.
How many birds would make it last 15 days?

Answer _____

11

The graph of $y = \frac{k}{x}$ passes through (3, 8). Find k, then find y when $x = 12$.



$y =$ _____

12

The time for a journey, t hours, is inversely proportional to the average speed, s km/h. At 60 km/h it takes 2 hours 15 minutes. How long does it take at 75 km/h? Give your answer in hours and minutes.

Answer _____

13

The time a job takes, t days, is inversely proportional to the number of machines, n. With 5 machines it takes 18 days. It must be finished in 12 days.
How many machines are needed?

Answer _____

14

y is inversely proportional to x.
When $x = 6$, $y = a$. When $x = 9$, $y = a - 4$. Find a.

$a =$ _____

15

Is y inversely proportional to x?
Explain how you know.

x	2	3	6
y	9	6	1

Answer _____

16

y is inversely proportional to x.
Mia says, "If x goes up by 2, y goes down by 2." Is she right?
Explain, using an example.

Answer _____