

Inverse Proportion: $y = k/x$



1
y is inversely proportional to x. When $x = 4$, $y = 6$.
Find y when $x = 8$.

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

2 Replace $\propto$ with k $y = \frac{k}{\boxed{}}$

3 Substitute $\boxed{} = \frac{k}{\boxed{}}$

4 Find k $k = \boxed{} \times \boxed{} = \boxed{}$

5 Formula $y = \frac{\boxed{}}{x}$

6 Use it, $x = 8$ $y = \frac{\boxed{}}{\boxed{}} = \boxed{}$

2
y is inversely proportional to x. When $x = 2$, $y = 10$.
Find y when $x = 5$.

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

2 Replace $\propto$ with k $y = \frac{k}{\boxed{}}$

3 Substitute $\boxed{} = \frac{k}{\boxed{}}$

4 Find k $k = \boxed{} \times \boxed{} = \boxed{}$

5 Formula $y = \frac{\boxed{}}{x}$

6 Use it, $x = 5$ $y = \frac{\boxed{}}{\boxed{}} = \boxed{}$

3
y is inversely proportional to x. When $x = 3$, $y = 8$.
Find y when $x = 12$.

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

2 Replace $\propto$ with k $y = \frac{k}{\boxed{}}$

3 Substitute $\boxed{} = \frac{k}{\boxed{}}$

4 Find k $k = \boxed{} \times \boxed{} = \boxed{}$

5 Formula $y = \frac{\boxed{}}{x}$

6 Use it, $x = 12$ $y = \frac{\boxed{}}{\boxed{}} = \boxed{}$

4
y is inversely proportional to x. When $x = 5$, $y = 4$.
Find y when $x = 2$.

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

2 Replace $\propto$ with k $y = \frac{k}{\boxed{}}$

3 Substitute $\boxed{} = \frac{k}{\boxed{}}$

4 Find k $k = \boxed{} \times \boxed{} = \boxed{}$

5 Formula $y = \frac{\boxed{}}{x}$

6 Use it, $x = 2$ $y = \frac{\boxed{}}{\boxed{}} = \boxed{}$

5
y is inversely proportional to x. When $x = 6$, $y = 2$.
Find y when $x = 4$.

$y = \frac{k}{x}$

Substitute _____

k = _____

Formula _____

Answer _____

6
y is inversely proportional to x. When $x = 2$, $y = 9$.
Find x when $y = 3$. *Notice the change!*

$y = \frac{k}{x}$

Substitute _____

k = _____

Formula _____

Answer _____

7
P is inversely proportional to Q. When $Q = 4$,
 $P = 15$.
Find P when $Q = 10$.

$P = \frac{k}{Q}$

Substitute _____

k = _____

Formula _____

Answer _____

8
M is inversely proportional to h. When $h = 3$, $M = 8$.
Find h when $M = 4$.

$M = \frac{k}{h}$

Substitute _____

k = _____

Formula _____

Answer _____

9
T is inversely proportional to n. When $n = 6$, $T = 10$.
Find n when $T = 15$.

$T = \frac{k}{n}$

Substitute _____

k = _____

Formula _____

Answer _____

10
The time, T hours, to finish a job is inversely
proportional to the number of workers, n.
6 workers take 10 hours.
(a) Find a formula for T in terms of n.
(b) How long would 15 workers take?

Start with $T \propto \frac{1}{n}$

11
The pressure, P, of a gas is inversely proportional
to its volume, V. When $V = 4$, $P = 30$.
(a) Find a formula for P in terms of V.
(b) Find V when $P = 40$.

Start with $P \propto \frac{1}{V}$

12
The number of days, d, a bag of dog food lasts is
inversely proportional to the number of dogs, n.
It lasts 12 days for 5 dogs.
(a) Find a formula for d in terms of n.
(b) How many dogs would finish it in 4 days?

Start with $d \propto \frac{1}{n}$

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



13



y is inversely proportional to x .
When $x = 0.4$, $y = 15$. Find y when
 $x = 2.5$.

Answer _____

14



y is inversely proportional to x .
Complete the table.

x	2	5		12
y	30		4	

Answer _____

15



The time, t hours, for a journey is
inversely proportional to the average
speed, s km/h. At 72 km/h the journey
takes 2 hours 30 minutes.

- (a) Find a formula for t in terms of s .
(b) What average speed makes the
journey take 2 hours 15 minutes?

(a) _____

(b) _____

16



y is inversely proportional to x^2 .
When $x = 2$, $y = 45$. Find y when $x = 3$.

Answer _____

17



The brightness, B lux, of the light from
a lamp is inversely proportional to the
square of the distance, d metres, from
the lamp. At 2 m the brightness is
150 lux. How far from the lamp is the
brightness 24 lux?

Answer _____

18



y is inversely proportional to x .
 x is increased by 25%.
By what percentage does y decrease?

Answer _____

19



A team of pickers takes 12 hours to
pick a field of strawberries.
With 3 more pickers, it takes 8 hours.
The time is inversely proportional to
the number of pickers.
How many pickers were in the
first team?

Answer _____

20



Here are some values of x and y .
Is y inversely proportional
to x ? Explain.

x	2	4	5	8
y	20	10	8	6

Answer _____