Inverse proportion: workers and time

ANSWERS

1

4 gardeners take **3 hours** to plant a flower bed. Each block is one gardener for one hour. How long would **6 gardeners** take?

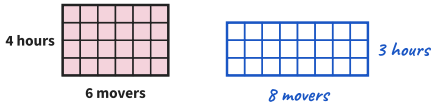


Total	4	×	3	=	12	
Share	12	÷	6	=	2	
Check	6	×	2	=	12	

Answer 2 hours

2

6 movers take **4 hours** to pack up a house. How long would **8 movers** take?



Total	6	×	4	=	24	
Share	24	÷	8	=	3	
Check	8	×	3	=	24	

Answer 3 hours

3

It takes **6 volunteers 8 hours** to clear the litter from a beach. How long would **16 volunteers** take?

Total	6	×	8	=	48	
Share	48	÷	16	=	3	
Check	16	×	3	=	48	

Answer 3 hours

4

A cycle route takes **3 hours** at **16 km/h**. How long does the same route take at **12 km/h**?

Total	16	×	3	=	48	
Share	48	÷	12	=	4	
Check	12	×	4	=	48	

Answer 4 hours

5

It takes **2 chefs 12 hours** to cook the food for a wedding. The food must be ready in **3 hours**. How many more chefs are needed?

2 × 12 = 24 hours of work,
24 ÷ 3 = 8 chefs, 8 − 2

Answer 6 more chefs

6

It takes **6 tilers 4 hours** to tile a floor. Omar says **3 tilers** would take **2 hours**, because there are half as many tilers. Explain Omar's mistake. Then find how long 3 tilers would take.

fewer tilers take longer,
3 × 2 = 6, not 24

Answer 8 hours

7

3 pumps empty a pond in **5 hours**. How long would **2 pumps** take? Give your answer in hours and minutes.

3 × 5 = 15, 15 ÷ 2 = 7.5 hours

Answer 7 hours 30 minutes

8

A train journey takes **2 hours** at **90 mph**. How long would the same journey take at **120 mph**? Give your answer in hours and minutes.

90 × 2 = 180 miles,
180 ÷ 120 = 1.5 hours

Answer 1 hour 30 minutes

Inverse proportion: workers and time *further practice*

ANSWERS

9

It takes **5 builders 6 days** to build a garden wall. How long would **3 builders** take?

5 × 6 = 30 days of work, 30 ÷ 3

Answer *10 days*

10

The table shows how long a job takes with different numbers of workers. Complete the table.

Workers	2	3	4	6
Hours	12	*8*	*6*	*4*

2 × 12 = 24 hours of work

11

A sack of dog food feeds **3 dogs** for **20 days**. How many days would it feed **5 dogs**?

3 × 20 = 60 days of food for one dog, 60 ÷ 5

Answer *12 days*

12

Ana walks a route in **3 hours** at **4 km/h**. How fast must she walk to finish the same route in **2 hours**?

4 × 3 = 12 km, 12 ÷ 2

Answer *6 km/h*

13

4 robots pack an order in **7 hours**. How long would **5 robots** take? Give your answer in hours and minutes.

4 × 7 = 28, 28 ÷ 5 = 5.6 hours, 0.6 × 60 = 36

Answer *5 hours 36 minutes*

14

It takes **3 caretakers 15 hours** to set out a hall for exams. The hall must be ready in **4 hours**. How many caretakers are needed?

3 × 15 = 45 hours of work, 45 ÷ 4 = 11.25, so 12

Answer *12 caretakers*

15

A ferry crosses a lake in **1 hour 30 minutes** at **40 km/h**. A hovercraft crosses the same lake at **60 km/h**. How many minutes does the hovercraft save?

40 × 1.5 = 60 km, 60 ÷ 60 = 1 hour

Answer *30 minutes*

16

It takes **1 person 30 minutes** to make a pizza. Kim says **30 people** would make it in **1 minute**. Explain why Kim's answer does not make sense.

30 people cannot all work on one pizza a

Answer *No, it does not*