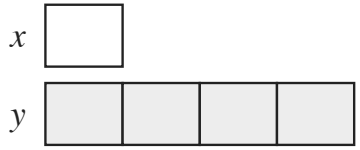
Ratios and linear functions

ANSWERS

1

$x : y = 1 : 4$. Complete the table and the rule.



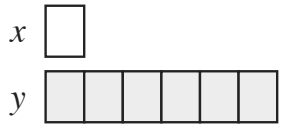
x	1	2	5	10
y	4	8	20	40

× 4

$y =$ 4 x

2

$x : y = 1 : 6$. Complete the table and the rule.



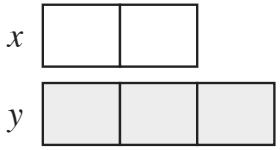
x	1	3	4	7
y	6	18	24	42

× 6

$y =$ 6 x

3

$x : y = 2 : 3$. Complete the table and the rule.



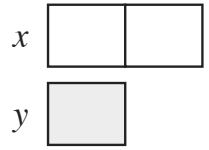
x	2	4	8	10
y	3	6	12	15

× 1.5

$y =$ 1.5 x

4

$x : y = 2 : 1$. Complete the table and the rule.



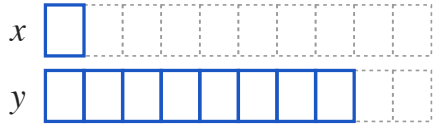
x	2	4	6	10
y	1	2	3	5

× 0.5

$y =$ 0.5 x

5

$y = 8x$. Complete the bars, the table and the ratio.



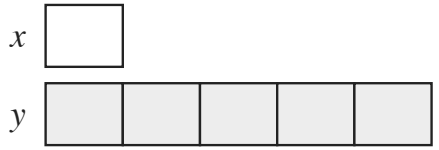
x	1	2	3	5
y	8	16	24	40

× 8

$x : y =$ 1 : 8

6

$x : y = 1 : 5$. Nell writes the rule as $x = 5y$. Use the column $x = 1$, $y = 5$ to show that Nell is wrong.
Write the right rule.

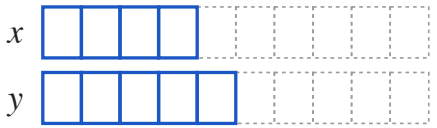


$x = 5 \times 5 = 25$, not 1

Rule $y = 5x$

7

A gardener mixes x kg of compost with y kg of soil in the ratio 4 : 5.
Write the rule. Find y when $x = 20$.



$5 \div 4 = 1.25$, $1.25 \times 20 = 25$

Rule $y = 1.25x$

$y =$ 25 kg

8

$y = 2.5x$. (a) Write the ratio $x : y$ in its simplest form. (b) Find x when $y = 30$.

$x = 2$: $y = 2.5 \times 2 = 5$

$2.5x = 30$, $x = 30 \div 2.5$

(a) 2 : 5

(b) 12

Ratios and linear functions *further practice*

ANSWERS

9

$x : y = 5 : 2$. Write the rule.
Find y when $x = 15$.

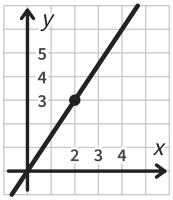
$2 \div 5 = 0.4$, $0.4 \times 15 = 6$

Rule $y = 0.4x$

$y =$ 6

10

Use the marked point to write $x : y$ in its simplest form and the rule for this line.



(2, 3): $x : y = 2 : 3$, $3 \div 2 = 1.5$

$x : y =$ 2 : 3

Rule $y = 1.5x$

11

At a fair, x pounds buys y tokens.
£4 buys 10 tokens.
(a) Write the rule. (b) How many pounds buy 35 tokens?

$10 \div 4 = 2.5$

$2.5x = 35$, $x = 35 \div 2.5 = 14$

(a) $y = 2.5x$

(b) £14

12

Which of these points are on the line $y = 4x$?
(3, 12), (5, 18), (7, 28), (0, 0), (6, 20)

$4 \times 5 = 20$, not 18

$4 \times 6 = 24$, not 20

(3, 12), (7, 28), (0, 0)

13

The rule for x and y is $2y = 7x$.
(a) Write the ratio $x : y$.
(b) Write the rule as $y = \square x$.

$x = 2$: $2y = 14$, $y = 7$

$y = 7x \div 2$

(a) 2 : 7

(b) $y = 3.5x$

14

A loaf uses x g of seeds and y g of flour, where $y = 3x$. It uses 240 g of seeds and flour altogether.
How much flour does it use?

$x : y = 1 : 3$, 4 parts

$240 \div 4 = 60$, $3 \times 60 = 180$

Answer 180 g

15

$x : y = 4 : 3$. Complete the table.

x	4	8	12	20
y	3	6	9	15

$y = 0.75x$, $0.75 \times 8 = 6$

$0.75 \times 12 = 9$, $0.75 \times 20 = 15$

16

Jay says that $y = 3x$ means the same as $x : y = 3 : 1$.
Is Jay right? Explain.

No. When $x = 1$, $y = 3$,

so $x : y = 1 : 3$.

3 : 1 would make y smaller than x.