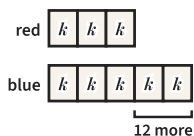


Ratio and equations

ANSWERS

1

The ratio of red to blue is 3 : 5. There are 12 more blue than red. How many red are there?



One part is k $3k$ and $5k$

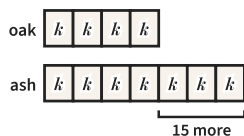
$$5k - 3k = 12$$

$$k = 6$$

Answer 18

2

The ratio of oak to ash is 4 : 7. There are 15 more ash than oak. How many oak are there?



One part is k $4k$ and $7k$

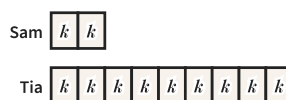
$$7k - 4k = 15$$

$$k = 5$$

Answer 20

3

Sam and Tia share £66 in the ratio 2 : 9. How much does each get?



One part is k $2k$ and $9k$

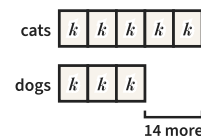
$$2k + 9k = 66$$

$$k = 6$$

Answer £12 and £54

4

The ratio of cats to dogs at a shelter is 5 : 3. There are 14 more cats than dogs. How many animals are there?



$$k = 7$$

Answer 56

5

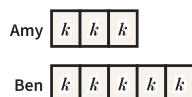
$(x + 3) : (2x - 1) = 2 : 3$. Find x .

$$3(x + 3) = 2(2x - 1)$$

Answer $x = 11$

6

The ratio of Amy's age to Ben's age is 3 : 5. In 6 years it will be 2 : 3. How old is Ben now?



$$3(3k + 6) = 2(5k + 6), k = 6$$

Answer 30

7

The sides of a rectangle are in the ratio 2 : 5. Its perimeter is 56 cm. Find its area.

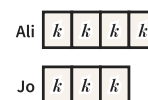


$$14k = 56, \text{ so the sides are } 8 \text{ cm and } 20 \text{ cm}$$

Answer 160 cm^2

8

Ali and Jo have counters in the ratio 4 : 3. Ali gives Jo 6 counters. Now they have the same number. How many did Ali have at the start?



$$4k - 6 = 3k + 6$$

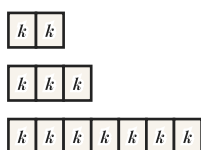
Answer 48

Ratio and equations further practice

ANSWERS

9

The angles of a triangle are in the ratio 2 : 3 : 7. Find the largest angle.

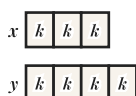


$$12k = 180$$

Answer 105°

10

$x : y = 3 : 4$ and $x + y = 35$. Find $y - x$.

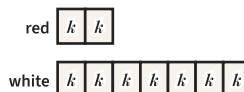


$$7k = 35, \text{ so } x = 15, y = 20$$

Answer 5

11

A tin holds 18 litres of red and white paint in the ratio 2 : 7. How much red paint must be added to make the ratio 1 : 2?

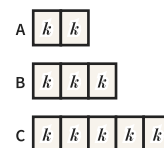


$$4 \text{ litres red, } 14 \text{ white; } 4 + 1 \text{ is half of } 14$$

Answer 3 litres

12

Prizes are shared between A, B and C in the ratio 2 : 3 : 5. C gets £36 more than A. How much is shared altogether?



$$3k = 36$$

Answer £120

13

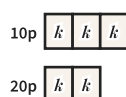
$(2x + 1) : (x + 4) = 5 : 3$. Find x .

$$3(2x + 1) = 5(x + 4)$$

Answer $x = 17$

14

A jar holds 10p and 20p coins in the ratio 3 : 2. The coins are worth £5.60. How many coins are in the jar?

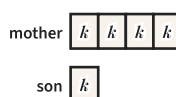


$$30k + 40k = 560 \text{ pence}$$

Answer 40

15

A mother's age and her son's age are in the ratio 4 : 1. In 6 years they will be in the ratio 5 : 2. How old is the son now?



$$2(4k + 6) = 5(k + 6)$$

Answer 6

16

Lily says if $A : B = 2 : 3$ and both get £5 more, the ratio stays 2 : 3. Is she right? Show it with an example.

$$\text{£4 and £6 become £9 and £11, which is not } 2 : 3$$

Answer No