

Practice 1 In the right order

Ratio · ANSWERS

The ratio of A to B is A : B. Write the amounts in the order the words name them.

EXAMPLE

A shelf holds 7 novels and 4 atlases.
Write the ratio of atlases to novels.

1. Atlases are named first, so they go first.
2. atlases : novels
3. 4 : 7

YOUR TURN

- 1 A garden has 9 apple trees and 4 pear trees. Write the ratio of pear trees to apple trees.

4 : 9

- 2 On a trip there are 15 students for every 2 teachers. Write the ratio of teachers to students.

2 : 15

- 3 A team played 20 matches. They won 13 and lost the rest.
Write the ratio of matches lost to matches won.

7 : 13

Check: Read your ratio back in words: the first number belongs to the first thing named.

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Practice 2 Simplify

Ratio · ANSWERS

Same units first. Then divide both parts by their highest common factor.

EXAMPLE

Simplify 45 cm : 2 m.

1. Same units: 2 m = 200 cm.
2. 45 : 200
3. Divide both by the HCF, 5.
4. 9 : 40

YOUR TURN

- 1 Simplify 18 : 30.

3 : 5

- 2 Simplify 56 : 42.

4 : 3

- 3 Simplify 750 g : 2 kg.

3 : 8

Check: The only number that divides both parts is 1, and there are no units left.

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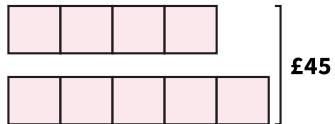
Practice 3 One part

Ratio · ANSWERS

Add the numbers in the ratio to get the total number of parts. One part is the amount $\div$ the total parts.

EXAMPLE

£45 is shared in the ratio 4 : 5.
What is one part worth?



1. Total parts: $4 + 5 = 9$
2. One part: $£45 \div 9 = £5$

YOUR TURN

- 1 35 sweets are shared in the ratio 2 : 5. How many sweets is one part?

5

- 2 A 72 cm ribbon is cut into two pieces in the ratio 5 : 3. How long is one part?

9 cm

- 3 £1.80 is shared in the ratio 7 : 2. What is one part worth?

20p

Check: Multiply one part by the total number of parts: you get back the amount you started with.

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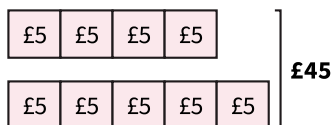
Practice 4 Share it

Ratio · ANSWERS

Find one part. Then multiply it by each number in the ratio.

EXAMPLE

Share £45 in the ratio 4 : 5.



1. One part: $£45 \div 9 = £5$
2. $4 \times £5 = £20$
3. $5 \times £5 = £25$

YOUR TURN

- 1 Share 40 in the ratio 3 : 5.

15 and 25

- 2 Asha and Leo share £84 in the ratio 4 : 3. How much does each get?

Asha £48, Leo £36

- 3 2 litres of drink is made by mixing cordial and water in the ratio 1 : 4. How many millilitres of water are used?

1600 ml

Check: Your shares add up to the amount, and they simplify back to the ratio.

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Practice 5 One share given

Ratio · ANSWERS

Is the amount you are given one share or the total? One share: divide it by that share's number in the ratio.

EXAMPLE

Red and white tiles are in the ratio 3 : 8.
There are 21 red tiles.
How many white tiles?

Red

7	7	7
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White

7	7	7	7	7	7	7	7
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1. 21 is the red share, not the total.
2. One part: $21 \div 3 = 7$
3. White: $8 \times 7 = 56$

YOUR TURN

- 1 Cats and dogs at a rescue centre are in the ratio 2 : 5.
There are 14 cats. How many dogs?

35

- 2 Ella and Jon share some money in the ratio 5 : 4. Jon gets £36.
How much does Ella get?

£45

- 3 A baker mixes flour and sugar in the ratio 7 : 2, using 300 g of sugar.
How much flour and sugar is that altogether?

1350 g

Check: Put your amounts back into the ratio: they must simplify to it.

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Practice 6 The difference given

Ratio · ANSWERS

Subtract the two numbers in the ratio: the difference is that many parts. Divide the difference by it for one part.

EXAMPLE

Kofi and Sara share sweets in the ratio 5 : 2. Kofi gets 18 more than Sara.
How many does Sara get?

Kofi

6	6			
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Sara

6	6
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18

1. Difference in parts: $5 - 2 = 3$
2. One part: $18 \div 3 = 6$
3. Sara: $2 \times 6 = 12$

YOUR TURN

- 1 Two shares are in the ratio 7 : 3. The first share is 20 more than the second. Find the first share.

35

- 2 At a school, the ratio of students who walk to students who get the bus is 4 : 9. There are 60 more students who get the bus than walk.
How many walk?

48

- 3 Max and Tia share money in the ratio 3 : 8. Tia gets £35 more than Max. How much money is shared?

£77

Check: Subtract your two shares: you get back the difference you were given.

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Practice 7 Ratio to fraction

Ratio · ANSWERS

A share as a fraction of the whole is its number over the total parts. So 3 : 5 gives $\frac{3}{8}$ and $\frac{5}{8}$, not $\frac{3}{5}$.

EXAMPLE

Adults and children on a trip are in the ratio 2 : 9. What fraction of the people are children?

1. Total parts: $2 + 9 = 11$
2. Children: 9 parts out of 11
3. Children: $\frac{9}{11}$

YOUR TURN

- 1 Milk and dark chocolates in a box are in the ratio 3 : 4. What fraction of the chocolates are milk?

$$\frac{3}{7}$$

- 2 Blue and yellow paint are mixed in the ratio 5 : 1. What fraction of the mix is yellow paint?

$$\frac{1}{6}$$

- 3 $\frac{2}{9}$ of the trees in a wood are oaks. The rest are birches. Write the ratio of oaks to birches.

$$2 : 7$$

Check: The fractions for all the shares add up to 1.

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Practice 8 Three parts

Ratio · ANSWERS

A ratio with three parts works the same way: add all three numbers for the total parts.

EXAMPLE

Share £60 in the ratio 1 : 2 : 3.

1. Total parts: $1 + 2 + 3 = 6$
2. One part: $£60 \div 6 = £10$
3. £10, £20 and £30

YOUR TURN

- 1 Share 90 in the ratio 2 : 3 : 4.

$$20, 30 \text{ and } 40$$

- 2 Gold, silver and bronze medals are in the ratio 1 : 3 : 5. There are 12 silver medals. How many medals altogether?

$$36$$

- 3 Nia, Omar and Priya share money in the ratio 2 : 5 : 6. Priya gets £12 more than Nia. How much does Omar get?

$$£15$$

Check: All three shares add up to the total, and each one is its number in the ratio $\times$ one part.

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