

KS3 – Ratio

Section A – Simplifying Ratios

Q1 (4 marks)

Simplify each ratio fully.

a) 8 : 12

b) 15 : 25

c) 18 : 30

d) 24 : 36

Q2 (4 marks)

Simplify each ratio fully.

a) 35 : 49

b) 42 : 63

c) 54 : 72

d) 45 : 75

Q3 (4 marks)

Simplify each three-part ratio fully.

a) 6 : 9 : 12

b) 10 : 15 : 25

c) 18 : 24 : 30

d) 21 : 35 : 49

Q4 (3 marks)

Write each ratio in its simplest form. Convert to the same units first.

a) 50 cm : 2 m

b) 300 g : 1.2 kg

c) 45 minutes : 2 hours

Challenge

Q5 (3 marks)

Find the missing number in each equivalent ratio.

a) 3 : 5 = 12 : x

b) 7 : 4 = x : 20

c) 6 : 11 = 18 : x

Section B – Sharing in a Ratio

Q6 (3 marks)

Share each amount in the ratio given.

a) £24 in the ratio 1 : 3

b) £35 in the ratio 2 : 5

c) 48 sweets in the ratio 5 : 3

Q7 (3 marks)

Share each amount in the ratio given.

a) £72 in the ratio 5 : 7

b) 90 kg in the ratio 4 : 5

c) 132 points in the ratio 7 : 4

Q8 (3 marks)

Share each amount in the three-part ratio given.

a) £60 in the ratio 1 : 2 : 3

b) 108 counters in the ratio 2 : 3 : 4

c) £180 in the ratio 4 : 5 : 6

Q9 (3 marks)

Solve each problem.

a) Ali and Ben share £84 in the ratio 3 : 4. How much does Ben receive?

b) Red and blue beads are in the ratio 5 : 2. There are 56 beads altogether. How many are red?

c) A prize of £150 is shared between Mia and Zara in the ratio 7 : 3. How much more does Mia receive than Zara?

Challenge

Q10 (4 marks)

Three friends share £240 in the ratio 3 : 5 : 7.

How much does each friend receive?

Section C – Ratio Problem Solving

Q11 (3 marks)

Use the ratios to find the missing quantities.

a) The ratio of boys to girls is 3 : 5. There are 18 boys. How many girls are there?

b) Red paint and white paint are mixed in the ratio 2 : 7. If 28 litres of white paint are used, how many litres of red paint are needed?

c) Flour and sugar are used in the ratio 5 : 2. If 350 g of flour is used, how much sugar is needed?

Q12 (3 marks)

Solve each ratio problem.

a) The ratio of cats to dogs at a shelter is 4 : 7. There are 44 animals altogether. How many are dogs?

b) The ratio of adults to children at an event is 5 : 3. There are 96 people altogether. How many are children?

c) A bag contains red, blue and green counters in the ratio 2 : 3 : 5. There are 70 counters altogether. How many are blue?

Q13 (3 marks)

Work out the ratio asked for.

a) In a class there are 12 boys and 18 girls. Write the ratio of boys to girls in its simplest form.

b) A box contains 15 red, 10 blue and 25 green pens. Write the ratio red : blue : green in its simplest form.

c) A recipe uses 240 g flour and 90 g sugar. Write the ratio flour : sugar in its simplest form.

Q14 (3 marks)

Solve each problem involving a known difference.

a) The ratio of Sam's money to Leo's money is 5 : 3. Sam has £24 more than Leo. How much does each have?

b) The ratio of adults to children is $7 : 4$. There are 18 more adults than children. How many people are there altogether?

c) The ratio of red to blue counters is $9 : 5$. There are 28 more red counters than blue counters. How many counters are there altogether?

Q15 (3 marks)

Solve each problem involving a known part.

a) The ratio of apples to oranges is $4 : 7$. There are 35 oranges. How many pieces of fruit are there altogether?

b) The ratio of Year 7 to Year 8 students is $6 : 5$. There are 48 Year 7 students. How many Year 8 students are there?

c) The ratio of £1 coins to 50p coins is $3 : 8$. There are 27 £1 coins. How many 50p coins are there?

Challenge

Q16 (4 marks)

A school has boys and girls in the ratio 7 : 9. There are 64 more girls than boys.
How many students are there altogether?

Q17 (4 marks)

A drink is made by mixing concentrate and water in the ratio 2 : 5. After 6 litres of water are added, the ratio becomes 1 : 4.
How much concentrate was in the original mixture?

Total: ____ / 57

Percentage: ____%