



- 1 Write down the ratio 20 : 35 in its simplest form.

(1 mark)

The highest common factor of 20 and 35 is 5

$$20 \div 5 = 4 \text{ and } 35 \div 5 = 7$$

20

$$35 = 4 : 7$$

Dividing both quantities by the same number preserves their relative sizes. Using the highest common factor leaves no further whole-number factor to cancel

$$4 : 7$$

- 2 In a Year 7 class there are 12 girls and 18 boys.

- Write down the ratio of girls to boys in its simplest form.
- Write the ratio of girls to boys in the form 1 : n

(2 marks)

a)

$$\text{girls : boys} = 12 : 18$$

$$\div 6 : 2 : 3$$

$$2 : 3$$

b)

$$\div 2 : 1 : 1.5$$

$$1 : 1.5$$

- 3 Write down the ratio 45 cm : 1.5 m in its simplest form.

(2 marks)

Convert to the same units

$$1.5 \text{ m} = 150 \text{ cm}$$

The ratio is 45 : 150

The highest common factor of 45 and 150 is 15

$$45 \div 15 = 3 \text{ and } 150 \div 15 = 10, \text{ so the ratio is } 3 : 10$$

$$3 : 10$$

- 4 Zara and Ben share £45 of birthday money in the ratio 4 : 5

Work out how much money each of them gets.

(2 marks)

$$4 + 5 = 9 \text{ parts}$$

$$1 \text{ part} = 45 \div 9 = £5$$

$$\text{Zara} = 4 \times 5 = £20$$

$$\text{Ben} = 5 \times 5 = £25$$

$$\text{Check: } 20 + 25 = 45$$

Zara £20, Ben £25

- 5 Kemi and Layla share some money in the ratio 3 : 7.

Kemi says, "I get $\frac{3}{7}$ of the money."

Kemi is wrong. Explain why.

(1 mark)

The total number of parts is $3 + 7 = 10$

Kemi gets 3 parts out of 10, which is $\frac{3}{10}$ of the money

$\frac{3}{7}$ compares her share with Layla's share, not with the total

- 6 In a gym class, the ratio of the number of men to the number of women is 4 : 5.

There are 20 men in the class.

Work out the total number of people in the class.

(2 marks)

4 parts represent 20 men, so 1 part = $20 \div 4 = 5$ people

$$\text{Women} = 5 \text{ parts} = 5 \times 5 = 25$$

$$\text{Total} = 20 + 25 = 45 \text{ people}$$

45

- 7 Orange squash is made by mixing concentrate and water in the ratio 1 : 6

Ali makes 1.4 litres of orange squash for his football team.

How many millilitres of concentrate does he use?

(2 marks)

$$1 + 6 = 7 \text{ parts}$$

$$1.4 \text{ litres} = 1400 \text{ mL}$$

$$1 \text{ part} = 1400 \div 7 = 200$$

200 mL

- 8 A recipe for 4 people uses 300 g of pasta.
Work out how much pasta is needed for 10 people.

(2 marks)

$$\text{Pasta for 1 person} = 300 \div 4 = 75 \text{ g}$$

$$\text{Pasta for 10 people} = 75 \times 10 = 750 \text{ g}$$

750 g

- 9 5 packets of football stickers cost £3.50
Work out the cost of 8 packets of the same stickers.

(2 marks)

$$1 \text{ packet} = 3.50 \div 5 = £0.70$$

$$8 \text{ packets} = 8 \times 0.70 = £5.60$$

£5.60

- 10 Amir, Bella and Carl share £132 in the ratio 1 : 4 : 6.
Work out how much money each of them gets.

(3 marks)

$$\text{Total parts} = 1 + 4 + 6 = 11$$

$$1 \text{ part} = £132 \div 11 = £12$$

$$\text{Amir gets } 1 \times £12 = £12, \text{ Bella gets } 4 \times £12 = £48, \text{ Carl gets } 6 \times £12 = £72$$

Check

$$12 + 48 + 72 = 132$$

- 11 It takes 3 parents 8 hours to paint the fence around a school field.
Everyone works at the same rate.

- a. How long would it take 4 parents to paint the fence?
b. How long would it take 6 parents to paint the fence?

(3 marks)

More people, Less time

$$1 \text{ parent: } 3 \times 8 = 24 \text{ hours}$$

a)

$$24 \div 4 = 6$$

6 hours

b)

$$24 \div 6 = 4$$

4 hours

12

Ella and Ravi share some sweets in the ratio 3 : 5

Ravi gets 12 more sweets than Ella.

How many sweets do they share altogether?

(3 marks)

$$\text{difference} = 5 - 3 = 2 \text{ parts}$$

$$2 \text{ parts} = 12, \text{ so } 1 \text{ part} = 6$$

$$\text{total} = 3 + 5 = 8 \text{ parts}$$

$$8 \times 6 = 48$$

$$\text{Check: } 18 \text{ and } 30, 30 - 18 = 12$$

48 sweets