



- 1 Aisha and Ben share £20 in the ratio 1 : 3.

How much does each person get?

(2 marks)

$$1 + 3 = 4 \text{ parts}$$

$$£20 \div 4 = £5$$

$$\text{Aisha: } 1 \times 5 = £5$$

$$\text{Ben: } 3 \times 5 = £15$$

£5 and £15

- 2 Write the ratio 50p : £2 in its simplest form.

(2 marks)

$$£2 = 200p$$

$$50 : 200$$

$$\div 50$$

1 : 4

- 3 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

- 4 A bag has 36 sweets. They are shared between Priya and Tom in the ratio 4 : 5.
How many sweets does each get?

(2 marks)

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

$$36 \div 9 = 4$$

$$\text{Priya: } 4 \times 4 = 16$$

$$\text{Tom: } 5 \times 4 = 20$$

16 and 20

- 5 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

- 6 Here are the first four terms of a sequence.

6 10 14 18

Write the ratio of the 2nd term to the 6th term in its simplest form.

(2 marks)

6, 10, 14, 18, 22, 26

$$10 : 26$$

$$\div 2$$

5 : 13

- 7 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

- 8 Money is shared between Lola and Femi in the ratio 3 : 5.

Lola gets £21.

Work out how much money was shared altogether.

(3 marks)

$$3 \text{ parts} = £21$$

$$1 \text{ part} = 21 \div 3 = £7$$

$$\text{Total} = 8 \text{ parts}$$

$$8 \times 7 = 56$$

$$\boxed{£56}$$

- 9 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

$$12 + 48 + 72 = 132$$

- 10 £250 is shared between three people in the ratio 2 : 3 : 5.

Work out the difference between the largest and the smallest share.

(3 marks)

$$2 + 3 + 5 = 10 \text{ parts}$$

$$£250 \div 10 = £25$$

$$\text{Largest: } 5 \times 25 = £125$$

$$\text{Smallest: } 2 \times 25 = £50$$

$$125 - 50 = 75$$

$$\boxed{£75}$$

- 11 In a choir there are 16 sopranos and 24 altos.
Write down the ratio of the number of sopranos to the number of altos.
Give your ratio in its simplest form.

(2 marks)

The ratio of sopranos to altos is 16 : 24

The highest common factor of 16 and 24 is 8

$16 \div 8 = 2$ and $24 \div 8 = 3$, so the ratio is 2 : 3

2 : 3

- 12 Red paint and white paint are mixed in the ratio 2 : 7.
The total amount of paint is 4.5 litres.
How many millilitres of red paint are used?

(3 marks)

$$4.5 \text{ L} = 4500 \text{ mL}$$

$$2 + 7 = 9 \text{ parts}$$

$$4500 \div 9 = 500$$

$$2 \times 500 = 1000$$

1000 mL

- 13 Each month Tom is paid £1800.
He saves 20% of the £1800.
He splits the rest between rent and bills in the ratio 5 : 3.
Work out how much Tom spends on rent each month.

(3 marks)

$$\text{Savings} = 20\% \text{ of } £1800 = £360, \text{ leaving } 1800 - 360 = £1440$$

$$\text{Total parts} = 5 + 3 = 8, \text{ so } 1 \text{ part} = 1440 \div 8 = £180$$

$$\text{Rent} = 5 \times £180 = £900$$

£900

14

A shop orders 240 candles.

The ratio of large candles to small candles ordered is 3 : 5.

Each large candle costs £4.20.

Each small candle costs £2.50.

Work out the total cost of the order.

(4 marks)

$$\text{Total parts} = 3 + 5 = 8, \text{ so } 1 \text{ part} = 240 \div 8 = 30 \text{ candles}$$

$$\text{Large candles} = 3 \times 30 = 90. \text{ Small candles} = 5 \times 30 = 150$$

$$\text{Cost of large candles} = 90 \times £4.20 = £378$$

$$\text{Cost of small candles} = 150 \times £2.50 = £375$$

$$\text{Total cost} = 378 + 375 = £753$$

£753

15

At a cinema screening there are 84 adults and 63 children.

Write down the ratio of the number of adults to the number of children.

Give your ratio in its simplest form.

(2 marks)

The ratio of adults to children is 84 : 63

The highest common factor of 84 and 63 is 21

$$84 \div 21 = 4 \text{ and } 63 \div 21 = 3, \text{ so the ratio is } 4 : 3$$

4 : 3

16

Ella, Fred and Grace share some money in the ratio 3 : 5 : 8.

Grace gets £35 more than Ella.

Work out the total amount of money they share.

(4 marks)

The difference between Grace's parts and Ella's parts is $8 - 3 = 5$ parts

$$5 \text{ parts} = £35, \text{ so } 1 \text{ part} = £7$$

$$\text{Total parts} = 3 + 5 + 8 = 16$$

$$\text{Total} = 16 \times £7 = £112$$

£112

- 17 At a show, the ratio of adults to children is 3 : 4.

There are 140 people altogether.

12 adults then leave.

Write the new ratio of adults to children in its simplest form.

(4 marks)

$$3 + 4 = 7 \text{ parts}$$

$$140 \div 7 = 20$$

Adults 60, children 80

$$60 - 12 = 48$$

$$48 : 80$$

$$\div 16$$

$$\boxed{3 : 5}$$

- 18 Leah and Sam share £480 in the ratio 5 : 7.

Sam gives 30% of his share to charity.

Leah gives £60 of her share to charity.

Sam gives more money to charity than Leah does.

Work out how much more.

(5 marks)

$$\text{Total parts} = 5 + 7 = 12, \text{ so } 1 \text{ part} = 480 \div 12 = £40$$

$$\text{Leah's share} = 5 \times £40 = £200. \text{ Sam's share} = 7 \times £40 = £280$$

$$\text{Sam gives } 30\% \text{ of } £280 = £84$$

$$\text{Leah gives } £60$$

$$\text{Difference} = 84 - 60 = £24$$

$$\boxed{£24}$$