

Ratio and Proportion

ANSWERS

Calculator | 30 minutes | Total marks: 28

Name _____ Class _____

- 1 (a) Simplify the ratio 1.5 m : 60 cm

$$150 : 60 \text{ (1)}$$

Answer 5 : 2 (1) [2 marks]

- (b) Write the ratio 4 : 10 in the form 1 : n

Answer 1 : 2.5 (1) [1 mark]

- 2 Share £180 in the ratio 2 : 3 : 4

$$180 \div 9 = 20 \text{ (1)}$$

$$2 \times 20, 3 \times 20, 4 \times 20 \text{ (1)}$$

Answer £40, £60, £80 (1) [3 marks]

- 3 Asha and Ben share some money in the ratio 5 : 3

Asha gets £24 more than Ben.

Work out the total amount of money they share.

$$2 \text{ parts} = \text{£}24, \text{ so } 1 \text{ part} = \text{£}12 \text{ (1)}$$

$$8 \times 12 \text{ (1)}$$

Answer £ 96 (1) [3 marks]

- 4 $x : y = 1 : 3$

Write a formula for y in terms of x .

Answer $y = 3x$ (1) [1 mark]

5

£1 = \$1.25

Change \$200 into pounds.

$$200 \div 1.25 \text{ (1)}$$

Answer £ 160 (1)

[2 marks]

6

(a) 5 workers take 12 days to build a wall.

How long would 4 workers take to build the same wall?

$$5 \times 12 = 60, 60 \div 4 \text{ (1)}$$

Answer 15 (1)

days

[2 marks]

(b) y is directly proportional to x .When $x = 8, y = 20$ Work out the value of y when $x = 14$

$$20 \div 8 = 2.5 \text{ (1)}$$

 $y =$ 35 (1)

[2 marks]

7

A map has a scale of 1 : 25 000

Two farms are 6 cm apart on the map.

Work out the actual distance between the farms.

Give your answer in kilometres.

$$6 \times 25\,000 = 150\,000 \text{ cm (1)}$$

Answer 1.5 (1)

km

[2 marks]

8

A shop sells cereal in two sizes of box.

The 250 g box costs £1.60

The 400 g box costs £2.48

Which box is better value?

You **must** show your working.

$$160 \div 250 = 0.64p \text{ per gram (1)}$$

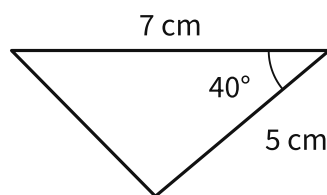
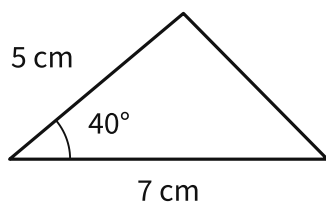
$$248 \div 400 = 0.62p \text{ per gram (1)}$$

Answer the 400 g box (1)

[3 marks]

9

Here are two triangles.



Not drawn accurately

Explain why the two triangles are congruent.

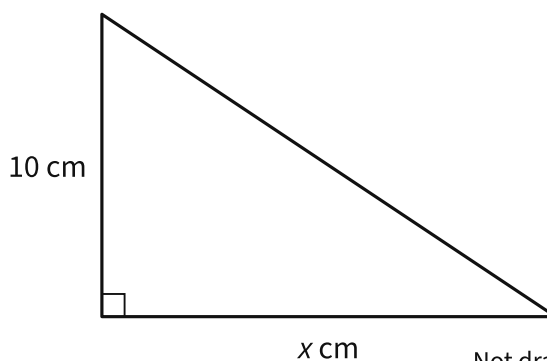
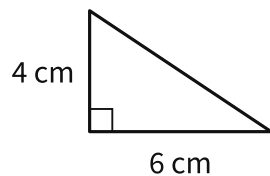
Two sides and the angle between them are the same (1)

SAS (1)

[2 marks]

10

These two triangles are similar.



Not drawn accurately

Work out the value of x .

scale factor $10 \div 4 = 2.5$ (1)

6×2.5 (1)

$x = 15$ (1)

[3 marks]

11

Two shapes are similar.

The lengths of the large shape are 3 times the lengths of the small shape.

The area of the small shape is 5 cm^2

Work out the area of the large shape.

$$3^2 = 9 \text{ (1)}$$

Answer 45 (1) cm^2 [2 marks]

Question	Topic	RAG
1	I can simplify ratios with units and write a ratio as 1 : n	
2	I can share an amount in a three part ratio	
3	I can use a difference to find a total	
4	I can write a ratio as a formula	
5	I can convert between currencies	
6	I can solve direct and inverse proportion problems	
7	I can use a map scale written as a ratio	
8	I can find the better value	
9	I can explain why two triangles are congruent	
10	I can find a missing length in similar shapes	
11	I know how similarity affects area	