

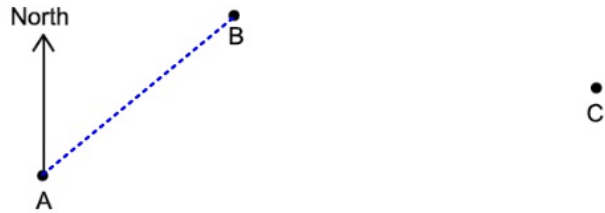
R14 Ratio 1 to N

OCR

4 Here is a scale drawing showing three towns A, B and C.

Created by

Scale: 1 cm represents 6 km



(a) Work out the actual distance AC.

(a) km [2]

(b) Measure the bearing of B from A.

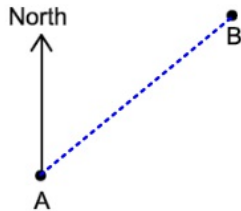
(c) The scale can be written in the form 1 : n .

Find the value of n .

4 Here is a scale drawing showing three towns A, B and C.

Created by

Scale: 1 cm represents 6 km



$$1000\text{m} = 1\text{km}$$

$$100\text{cm} = 1\text{m}$$

C

$$1 : N$$

$$1\text{cm} : 6\text{km}$$

(a) Work out the actual distance AC.

$$x9 \left(\begin{array}{l} 1\text{cm} = 6\text{km} \\ 9\text{cm} \end{array} \right) x9 \quad 54$$

(a) km [2]

$$1\text{cm} : 6000\text{m}$$

$$1\text{cm} : 600000\text{cm}$$

(b) Measure the bearing of B from A.

$$050^\circ$$

$$1 : 600000$$

(c) The scale can be written in the form $1 : n$.

Find the value of n .

(b) Another recipe has these ingredients.

Dark chocolate	300g
Cream	175 ml

100 ml of cream weighs 99g.

The ratio of the weight of dark chocolate to the weight of cream can be written in the form $1 : n$.

Find the value of n .

(b) $n = \dots\dots\dots$ [3]

(b) Another recipe has these ingredients.

Dark chocolate	300g
Cream	175 ml

100 ml of cream weighs 99g.

The ratio of the weight of dark chocolate to the weight of cream can be written in the form 1 : n.

Find the value of n .

$$\begin{array}{l} 100 \text{ ml} = 99 \text{ g} \\ \downarrow \times 1.75 \\ 175 \text{ ml} = 173.25 \end{array}$$

$$\begin{array}{l} \text{dC} : \text{Cream} \\ 300 \text{ g} : 175 \text{ ml} \end{array}$$

Ans

$$\begin{array}{l} 300 \text{ g} : 173.25 \text{ g} \\ \downarrow \div 300 \\ 1 : 0.5775 \end{array}$$

(b) $n = \dots\dots\dots 1 : 0.5775 \dots\dots\dots$ [3]

13 (a) The ratio 20 minutes to 1 hour can be written in the form $1:n$.

Find the value of n .

(a) $n = \dots\dots\dots$ [1]

(b) The scale on a map is $1:25\,000$.

How many kilometres on the ground is represented by 6 cm on the map?

(b) $\dots\dots\dots$ km [3]

13 (a) The ratio 20 minutes to 1 hour can be written in the form $1:n$.

Find the value of n .

$$\begin{array}{l} 20 : 60 \\ 1 : 3 \end{array}$$

(a) $n = \dots\dots\dots 3 \dots\dots\dots$ [1]

(b) The scale on a map is $1:25000$.

How many kilometres on the ground is represented by 6 cm on the map?

$$\begin{array}{l} 1\text{cm} = 25000\text{cm} \\ 1\text{cm} = 250\text{m} \\ 1\text{cm} = 0.25\text{km} \\ 6\text{cm} = \end{array}$$

(b) $\dots\dots\dots 1.5\text{km} \dots\dots\dots$ km [3]

17 (a) The scale of a map is 1 cm represents 25 m.

(i) The length of a path is 240 m.

Work out the length, in centimetres, of the path on the map.

(a)(i)cm [1]

(ii) The scale 1 cm represents 25 m can be written in the form $1:k$.

Find the value of k .

(ii) $k =$ [1]

17 (a) The scale of a map is 1 cm represents 25 m.

(i) The length of a path is 240 m.

Work out the length, in centimetres, of the path on the map.

$$\begin{array}{l} \times 9.6 \quad \left(\begin{array}{l} 1 \text{ cm} = 25 \text{ m} \\ = 240 \text{ m} \end{array} \right) \times 9.6 \end{array}$$

(a)(i) 9.6 ✓ cm [1]

(ii) The scale 1 cm represents 25 m can be written in the form 1:k. $100 \text{ cm} = 1 \text{ m}$

Find the value of k.

$$1 \text{ cm} = 2500 \text{ cm}$$

(ii) k = 2500 [1]

- 6** (a) Lucy and Ben share £42.
Lucy's share is £30.

Write the ratio Lucy's share : Ben's share in its simplest form.

(a) : [2]

- (b) The ratio 2.5 metres to 70 centimetres can be written in the form $1:n$.

Find the value of n .

(b) $n =$ [2]

- 6 (a) Lucy and Ben share £42.
Lucy's share is £30.

Write the ratio Lucy's share : Ben's share in its simplest form.

$$30 : 12$$

$$15 : 6$$

$$5 : 2$$

(a) 5 : 2 [2]

- (b) The ratio 2.5 metres to 70 centimetres can be written in the form $1 : n$.

Find the value of n .

$$2.5 \text{ metres} : 70 \text{ cm}$$

$$\begin{array}{l} \div 250 \left(\begin{array}{l} 250 \text{ cm} : 70 \text{ cm} \\ 1 : 0.28 \end{array} \right) \div 250 \end{array}$$

(b) $n =$ 0.28 [2]

5 (a) Write 12:54 as a ratio in its simplest form.

R13

(a) : [2]

(b) The ratio 400g : 1 kg can be written in the form $1 : n$.

R14 Find the value of n .

(b) $n =$ [2]

- 5 (a) Write 12:54 as a ratio in its simplest form.

R13

$$6 : 27$$

$$2 : 9 \quad \checkmark$$

— 1000g

(a) $2 : 9$ [2]

- (b) The ratio 400g : 1 kg can be written in the form 1 : n .

R14 Find the value of n .

$$400 : 1000 \quad \div 400 \rightarrow 1 : 2.5$$

(b) $n = 2.5$ [2]

- (c) Amanda and Wim share some money in the ratio 2 : 5.
Wim receives £115.

R15a

Calculate how much money was shared.

(c) £ [3]

- (c) Amanda and Wim share some money in the ratio 2:5.
Wim receives £115.

A W

7 intotsl

R15a

Calculate how much money was shared.

$$\text{Wim} = 5 \text{ parts}$$

$$\begin{aligned} \div 5 \left(\begin{array}{l} 5 \text{ parts} = \pounds 115 \\ 1 \text{ part} = \pounds 23 \end{array} \right) \div 5 \\ 7 \text{ parts} = \end{aligned}$$

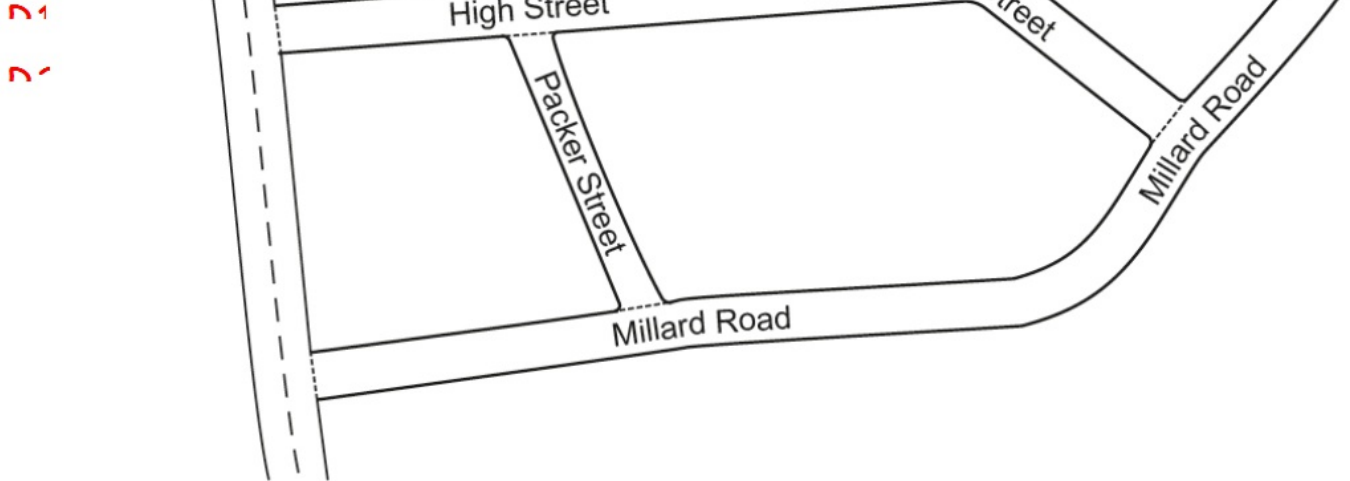
$$\left. \begin{array}{l} \div 5 \\ \times 7 \end{array} \right\}$$

£161

(c) £ [3]

23 This map shows part of a village.

Video asset.



Neil knows that Packer Street is 180 m long in real life.

(a) Neil measures the map.

He says

Packer Street is 3.5 cm long.
High Street is 11.2 cm long.

Therefore, I calculate that High Street is 576 m long in real life.

Use Neil's figures to show that the answer to his calculation is correct.

[3]

(c) On another map, Packer Street is 2.4 cm long.

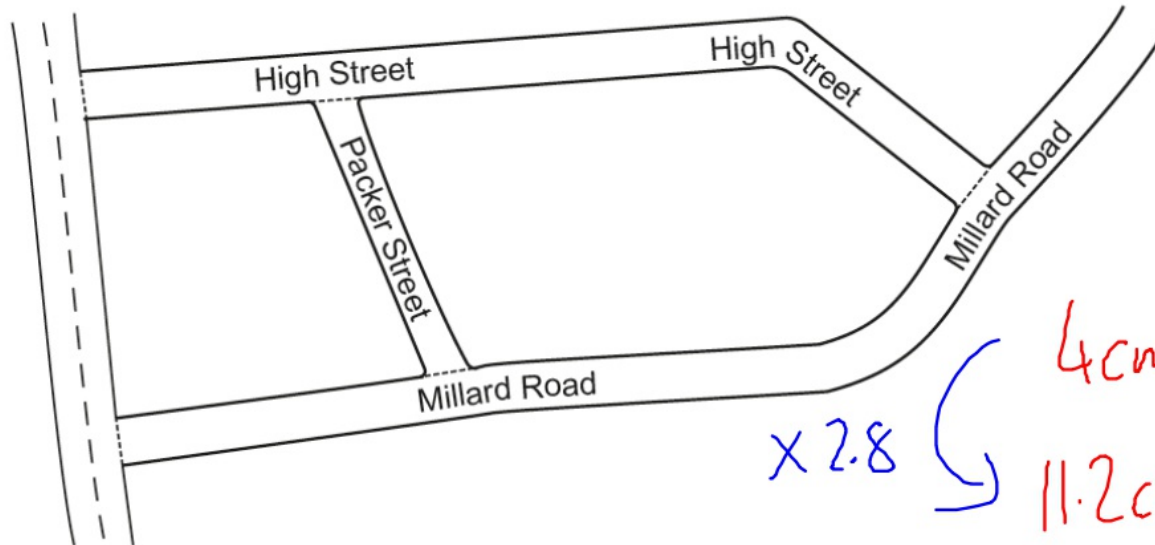
Express the scale of this map in the form $1 : n$.

R14

(c) $1 : \dots\dots\dots$ [2]

This map shows part of a village.

Video asset.



$4\text{cm} = 180\text{m}$
 $11.2\text{cm} = 504\text{m}$

$\times 2.8$ $\times 2.8$

✓

Neil knows that Packer Street is 180m long in real life.

(b) Jodie measures the same map.

She says

I think Packer Street is longer than Neil's measurement of 3.5 cm.
Therefore, High Street must be longer than 576 m in real life.

Is Jodie's reasoning correct?
Show how you decide.

No, if it was longer than 3.5 cm the multiplier would be smaller. High street would be less.

(c) On another map, Packer Street is 2.4 cm long.

Express the scale of this map in the form 1 : n .

R14

$$2.4 \text{ cm} : 180 \text{ m}$$

$$2.4 \text{ cm} : 18000 \text{ cm}$$

$$\begin{array}{ccc} \div 2.4 & \left(\begin{array}{l} 2.4 : 18000 \\ \downarrow \div 2.4 \\ 1 : \end{array} \right. & \left. \right) \div 2.4 \end{array}$$

(c) 1 : 7500 [2] ✓

1 (a) The ratio 2 centimetres to 5 metres can be written in the form $1 : n$.

Find the value of n .

(a) $n = \dots\dots\dots$ [2]

- 1 (a) The ratio 2 centimetres to 5 metres can be written in the form $1 : n$.

Find the value of n . 500cm

$$2\text{cm} : 500\text{cm}$$

$$2 : 500$$

$$1 : 250$$

(a) $n = \dots\dots\dots 250 \dots\dots\dots$ [2]

(b) Jay, Sheila and Harry share £7200 in the ratio 1 : 2 : 5.

How much does Harry receive?

(b) £ **[2]**

J S H

(b) Jay, Sheila and Harry share £7200 in the ratio 1 : 2 : 5. 8 parts

How much does Harry receive?

$$\begin{aligned} & \text{£}7200 = 8 \text{ parts} \\ \times 5 \quad \left(\begin{aligned} & \text{£}900 = 1 \text{ part} \\ & \text{£}4500 = 5 \text{ parts} \end{aligned} \right. \end{aligned}$$

(b) £ 4500 [2]

Edexcel

14 (a) Write $\pounds 4.20 : \pounds 1.40 : \pounds 7$ in its simplest form.

.....
(2)

(b) Write a number on the dotted line to complete the statement $6 : 4 = \dots : 1$

(1)

(Total for Question 14 is 3 marks)

14 (a) Write $\pounds 4.20 : \pounds 1.40 : \pounds 7$ in its simplest form.

$$\begin{array}{l} \times 5 \left(\right. \\ \left. \rightarrow 21 : 7 : 35 \right. \\ \div 7 \downarrow \\ 3 : 1 : 5 \end{array}$$

$$3:1:5 \underline{\hspace{1cm}}$$

(2)

(b) Write a number on the dotted line to complete the statement $6 : 4 = \underline{\hspace{1cm}} : 1$

$$\div 4 \left(\begin{array}{l} 6 : 4 \\ \rightarrow 1.5 : 1 \end{array} \right) \div 4$$

(1)

(Total for Question 14 is 3 marks)

AQA

24

$$\frac{1}{2} : \frac{2}{3} = x : 1$$

Circle the value of x .

[1 mark]

$$\frac{1}{3}$$

$$\frac{3}{5}$$

$$\frac{3}{4}$$

$$\frac{4}{3}$$

24 $\frac{1}{2} : \frac{2}{3} = x : 1$

R14

Circle the value of x .

[1 mark]

$\frac{1}{3}$

$\frac{3}{5}$

$\frac{3}{4}$

$\frac{4}{3}$

$\frac{1}{2} : \frac{2}{3}$

$1 : 1\frac{1}{3}$

$1\frac{1}{2} : 2$

$3 : 4 \checkmark$

$$\div 4 \quad \left(\begin{array}{l} 3 : 4 \\ \frac{3}{4} : 1 \end{array} \right) \div 4$$

19 (b) Write the ratio $7 : 4$ in the form $n : 1$

[1 mark]

R14

Answer _____ :

19 (b) Write the ratio $7 : 4$ in the form $n : 1$

[1 mark]

R14

$$\div 4 \quad \left(\begin{array}{l} 7 : 4 \\ 1.75 : 1 \end{array} \right) \div 4$$

Answer 1.75 : 1

20 $a : b = 5 : 2$

R13 How many times larger is a than b ?

R14 Circle your answer.

[1 mark]

0.4

1.5

2.5

3

20 $a : b = 5 : 2$

R13 How many times larger is a than b ?

R14 Circle your answer.

[1 mark]

0.4

1.5

2.5

3

$$a : b$$

$$5 : 2$$

$\times 2.5$

19 A forest has 6500 trees.

The trees are beech or maple.

number of beech : number of maple = 1.6 : 1

19 (a) What fraction of the trees are beech?

[2 marks]

R13

Answer _____

A forest has 6500 trees.

The trees are beech or maple.

$$\text{number of beech} : \text{number of maple} = 1.6 : 1$$

19 (b) Write number of beech : number of maple in the form $1 : n$

[1 mark]

R14

Answer _____ : _____

19 A forest has 6500 trees.

The trees are beech or maple.

$$\begin{array}{c} B \quad M \\ \text{number of beech : number of maple} = 1.6 : 1 = 2.6 \end{array}$$

19 (a) What fraction of the trees are beech?

[2 marks]

R13

$$\frac{1.6}{2.6}$$

Answer

$$\frac{8}{13}$$

A forest has 6500 trees.

The trees are beech or maple.

$$\text{number of beech} : \text{number of maple} = 1.6 : 1$$

19 (b) Write number of beech : number of maple in the form $1 : n$

[1 mark]

or

$$\begin{array}{l} B : M \\ \div 1.6 \left(\begin{array}{l} 1.6 \\ 1 \end{array} \right) : 1 \quad \left. \right) \div 1.6 \\ : 0.625 \end{array}$$

Answer 1 : 0.625