Name ANSWERS	Class

MATHS TEACHER HUB

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Scale

(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

6 A map has a scale of 1 cm represents 4 km.

On the map, the distance from town A to town B is 8 cm.

(a) Work out the real distance, in km, from town A to town B.

4km x 8

32 km

(2)

The real length of a road is 10 km.

(b) Work out the length of the road on the map.
Give the units of your answer.

$\frac{10\text{km}}{4\text{km}} =$

2.5cm

(2)

(Total for Question 6 is 4 marks)

7 Matt is drawing a scale diagram.

1 cm represents 5 m.

He draws a line 3 cm long.

(a) What real distance does the line represent?

15 m

(1)

The real distance between two points is 20 m.

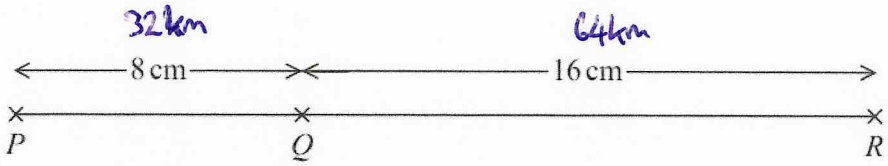
(b) What is the distance between the two points on the scale diagram?

4 cm

(1)

(Total for Question 7 is 2 marks)

8 The diagram shows three motorway service stations P, Q and R on a map.



The map has a scale of 1 cm = 4 km.

Work out the real distance from P to R.

$$\begin{array}{r} 32 \\ +\ 64 \\ \hline 96 \end{array}$$

96 km

(Total for Question 8 is 3 marks)

8 A map has a scale of 1 cm to 14 km.

On the map, the distance between Manchester and London is 18.8 cm.

What is the real distance, in km, between Manchester and London?

18·8 x 14

263·2 km

November 2018 – Paper 2F **(Total for Question 8 is 2 marks)**

8 A model plane has a length of 17 cm.

The scale of the model is 1:200

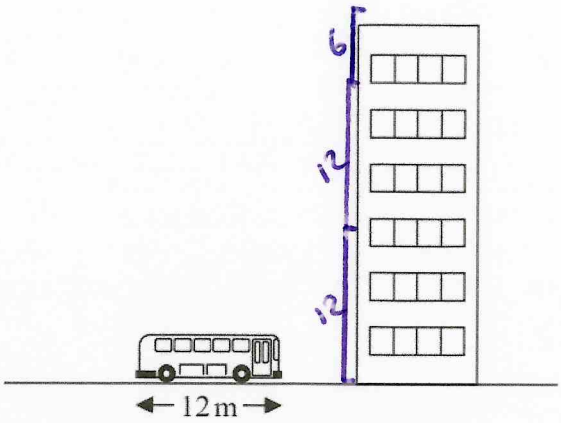
Work out the length of the real plane.
Give your answer in metres.

200 x 17 = 3400cm

34 metres

Specimen 2 – Paper 3F **(Total for Question 8 is 2 marks)**

8



The picture shows a bus next to a building.
The bus has a length of 12 m.

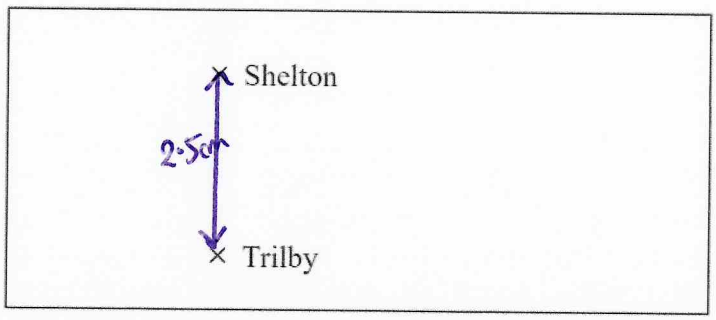
The bus and the building are drawn to the same scale.

Work out an estimate for the height, in metres, of the building.

30 m

(Total for Question 8 is 2 marks)

12 The diagram shows two places on a map.



Scale: 1 centimetre represents 20 kilometres

(a) What is the actual distance, in kilometres, from Shelton to Trilby?

2.5 × 20

50 kilometres

(2)

On a scale drawing, the scale is given as 1 : 1200

(b) How many metres does 5 centimetres represent on this drawing?

1 : 1200

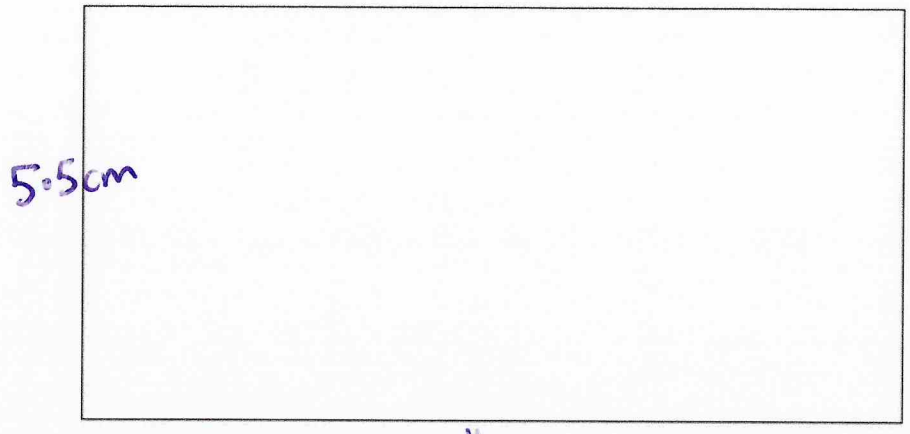
5 : 6000 cm

60 metres

(2)

(Total for Question 12 is 4 marks)

12 The diagram shows a scale drawing of a tennis court.



The scale of the drawing is 1 : 200

Work out the perimeter of the real tennis court.
Give your answer in metres.

Perimeter = 5·5 + 5·5 + 11 + 11

= 33cm

1 : 200

33 : 6600cm

66 ..... metres

(Total for Question 12 is 5 marks)

12 The length of a car is 3.6 metres. → 360 cm

Karl makes a scale model of the car.
He uses a scale of 1 cm to 30 cm.

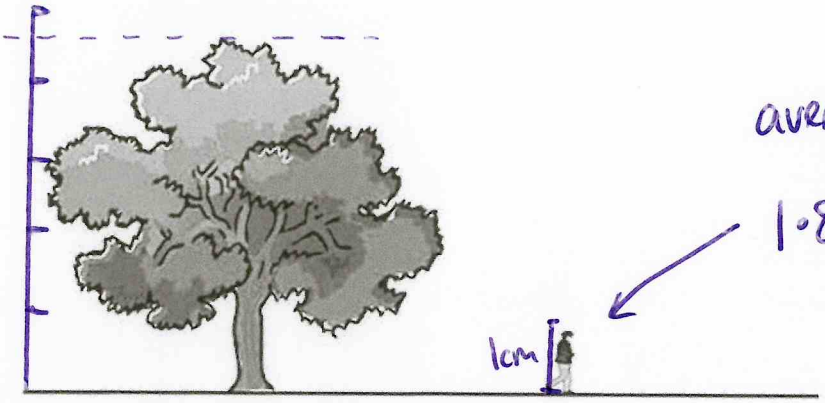
Work out the length of the scale model of the car.
Give your answer in centimetres.

1 cm : 30 cm
12 cm : 360 cm ×12

12 ..... cm

(Total for Question 12 is 2 marks)

13 The diagram shows a tree and a man.



The man is of average height.
The tree and the man are drawn to the same scale.

(a) Write down an estimate for the real height, in metres, of the man.

1·8 x 4·5 = 8·1m
or
2 x 4·5 = 9m

1·8 or 1

..... metres

(1)

(b) Find an estimate for the real height, in metres, of the tree.

1·8 x 4·5 = 8·1m
or
2 x 4·5 = 9m

8·1

..... metres

(2)

(Total for Question 13 is 3 marks)

14 Jenny drives from London to Swindon at an average speed of 54 miles per hour.

She drives for $1\frac{1}{2}$ hours.

(a) Work out the distance from London to Swindon.

$54 \times \frac{3}{2} = \frac{162}{2} = 81$

81 miles

(2)

Aleksy is using a map.

The map has a scale of 1 : 25 000

On the map a road has a length of 6 cm.

(b) Work out the length, in kilometres, of the real road.

1 : 25000

6 : 150000 cm

6 : 1500 m

6 : 1·5 km

1·5 kilometres

(3)

(Total for Question 14 is 5 marks)

15 The length of a plane is 19.2 metres. 1920 cm

Lukas buys a scale model of the plane.
The scale of the model is 1 : 24

Work out the length of the scale model of the plane.
Give your answer in centimetres.

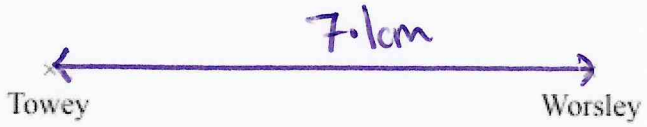
1 : 24
80 : 1920 ×80

80 centimetres

November 2019 – Paper 2F **(Total for Question 15 is 3 marks)**

15 The diagram below represents two towns on a map.

Diagram
accurately drawn



Scale: 1 cm represents 3 kilometres.

Work out the distance, in kilometres, between Towey and Worsley.

1cm : 3 km
7cm : 21 km
7.1cm : 21.3 km

21.3 km

Sample 1 – Paper 2F **(Total for Question 15 is 2 marks)**

16 On a scale drawing, a building has length 12.4 cm and width 9.4 cm.
The real length of the building is 62 metres.

Work out, in metres, the real width of the building.

12.4 cm → 6200 cm

×500

9.4 cm → 4700 cm

×500

47 ..... metres

(Total for Question 16 is 3 marks)