FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

R2: Scale and maps

Scale factors, scale diagrams and maps

20 marks · 25 minutes · Non-calculator

1) A map has a scale of 1 : 25 000. Two villages are 4 cm apart on the map. How far apart are they in real life? Give your answer in km.

..... km

[Question 1: 2 marks]

2) Two towns are 3.5 km apart. How far apart are they on a map with scale 1 : 50 000?

..... cm

[Question 2: 2 marks]

3) A scale drawing of a room uses 1 cm to represent 2 m. On the drawing the room is 4.5 cm by 3 cm.

(a) Find the real length and width of the room.

..... m by ..... m

(2)

(b) Find the real area of the room.

..... m^2

(1)

[Question 3: 3 marks]

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4) A model car is made to a scale of 1 : 20. The model is 21 cm long. How long is the real car? Give your answer in metres.

..... m

[Question 4: 2 marks]

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5) On a map, 2 cm represents 1 km. Write the scale of the map in the form 1 : *n*.

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[Question 5: 2 marks]

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6) A shape is enlarged.

(a) A side of 4.5 cm is enlarged by scale factor 3. How long is the new side?

..... cm

(1)

(b) A side of 9 cm is enlarged by scale factor $\frac{1}{2}$. How long is the new side?

..... cm

(1)

[Question 6: 2 marks]

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7) Two cities are 12 km apart. How far apart are they on a map with scale 1 : 200 000?

..... cm

[Question 7: 2 marks]

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8) A plan has a scale of 1 : 50. A wall is 3 m long. How long is it on the plan?

..... cm

[Question 8: 1 marks]

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9) A line of 6 cm is enlarged to 15 cm. What is the scale factor?

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[Question 9: 1 marks]

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10) A map has a scale of 1 : 25 000. A rectangular field measures 2 cm by 3 cm on the map. Find the real area of the field in km^2.

..... km^2

[Question 10: 3 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	1	$4 \times 25\,000 = 100\,000$ cm (M1); A1.
2	7	$350\,000 \div 50\,000$ (M1); A1.
3	(a) 9 m by 6 m (b) 54	(a) B1 each. (b) B1.
4	4.2	$21 \times 20 = 420$ cm (M1); A1.
5	1 : 50 000	1 km = 100 000 cm (M1); A1.
6	(a) 13.5 (b) 4.5	B1 each.
7	6	$1\,200\,000 \div 200\,000$ (M1); A1.
8	6	B1.
9	2.5	B1.
10	0.375	Real sides 0.5 km and 0.75 km (M1, M1); 0.375 (A1).