THIRD SPACE LEARNING

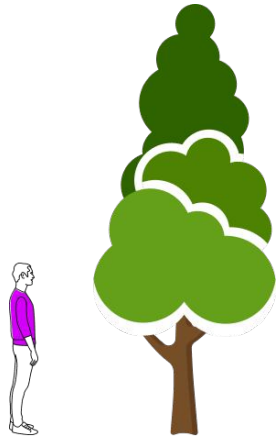
GCSE Exam Questions

Scale Maths | Ratio & Proportion

GCSE Exam Questions: Scale Maths

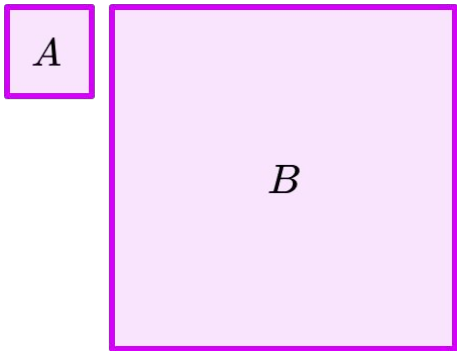
1) (a) The diagram below shows a man standing next to a tree.

Given that the man is 2m tall, estimate the height of the tree.



(3)

(b) Square A has an area of $4cm^2$. Estimate the area of square B.



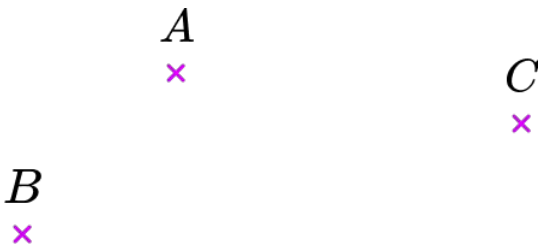
(4)

(7 marks)

GCSE Exam Questions: Scale Maths

2) **(a)** Three radio masts are located at points A, B, and C.

Given that the actual distance between masts A and B is 16.8km, calculate the scale of the diagram to the actual distance.



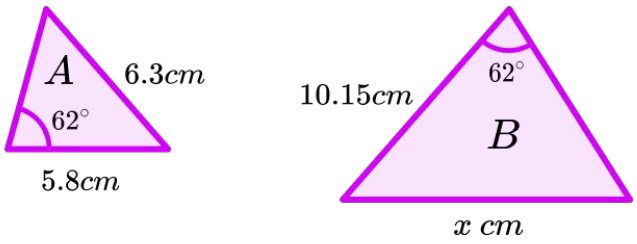
(2)

(b) What is the actual distance of mast C from mast B?

(2)

(4 marks)

3) **(a)** The two triangles below are similar. Calculate the value of x.



(3)

(b) What is the scale ratio of Triangle B to Triangle A in its simplest form.

(2)

(5 marks)

GCSE Exam Questions: Scale Maths

4) (a) The distance on a map with the scale 1:50,000 is x cm.

What is the length of the same route on a map with a scale of 1:25,000?

Circle the correct answer.

$2x$	x	$\frac{1}{2}x$	$50000x$

(1)

(b) Ollie is answering the question:

> The distance between two points on a map is 123 kilometres. Given that the ratio on the map is 1:120000, calculate the distance on the map. State the units for your answer.

Below is his solution.

$$120,000 \div 123 =$$

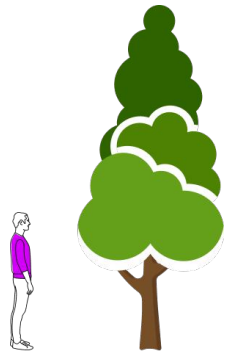
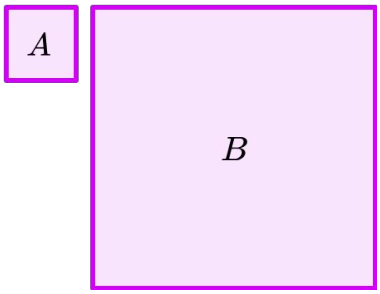
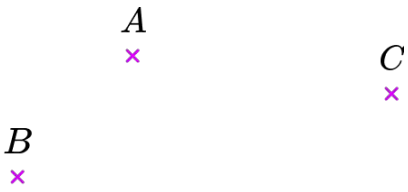
$$= 975.61cm\ (2dp)$$

Is Ollie correct? Explain your answer.

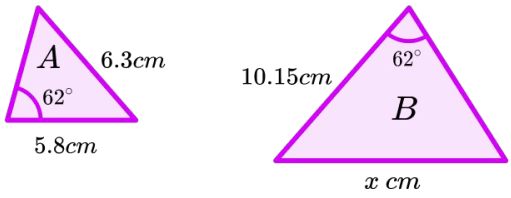
(4)

(8 marks)

GCSE Exam Questions: Scale Maths Answers

	Question	Answer	Marks
1) (a)	The diagram below shows a man standing next to a tree. Given that the man is 2m tall, estimate the height of the tree. 	**(a)** Man = 2.3cm, Tree = 5.6cm ($\pm 0.1cm$) $5.6 \div 2.3 \times 2$ $4.87m$ (2dp)	**(1)** **(1)** **(1)**
(b)	Square A has an area of $4cm^2$. Estimate the area of square B. 	**(b)** Square A = 1.1cm ($\pm 0.1cm$) width **and** Square B = 4.4cm ($\pm 0.1cm$) width **seen** '4.4' ÷ '1.1' = 4 '4'^{2} = 16 $4 \times 16 = 64cm^2$ **ft**	**(1)** **(1)** **(1)** **(1)**
2) (a)	Three radio masts are located at points A, B, and C. Given that the actual distance between masts A and B is 16.8km, calculate the scale of the diagram to the actual distance. 	**(a)** $16.8 \div 3 = 5.6\ km$ $1\ cm : 5.6\ km$	**(1)** **(1)**
(b)	What is the actual distance of mast C from mast B?	**(b)** $6.8\ cm\ (\pm\ 0.1\ cm) \times 5.6$ $38.08\ km$	**(1)** **(1)**

GCSE Exam Questions: Scale Maths Answers

	Question	Answer	Marks
3) (a)	The two triangles below are similar. Calculate the value of x. 	**(a)** $10.15 \div 5.8 = 1.75$ 6.3×1.75 $x = 11.025cm$	**(1)** **(1)** **(1)**
(b)	What is the scale ratio of Triangle B to Triangle A?	**(b)** 1.75:1 7:4	**(1)** **(1)**
4) (a)	The distance on a map with the scale 1:50,000 is $x$cm. What is the length of the same route on a map with a scale of 1:25,000? $2x$ | x | $\frac{1}{2}x$ | $50000x$	**(a)** $2x$	**(1)**
(b)	Ollie is answering the question: The distance between two points on a map is 123 kilometres. Given that the ratio on the map is 1:120000, calculate the distance on the map. State the units for your answer. Below is his solution. $120,000 \div 123 =$ $= 975.61cm\ (2dp)$ Is Ollie correct? Explain your answer.	**(b)** Ollie was wrong **with reason** $120000cm = 1.2km$ $1:1.2km$ $123 \div 1.2 = 102.5cm$	**(1)** **(1)** **(1)** **(1)**

Where to go next?

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