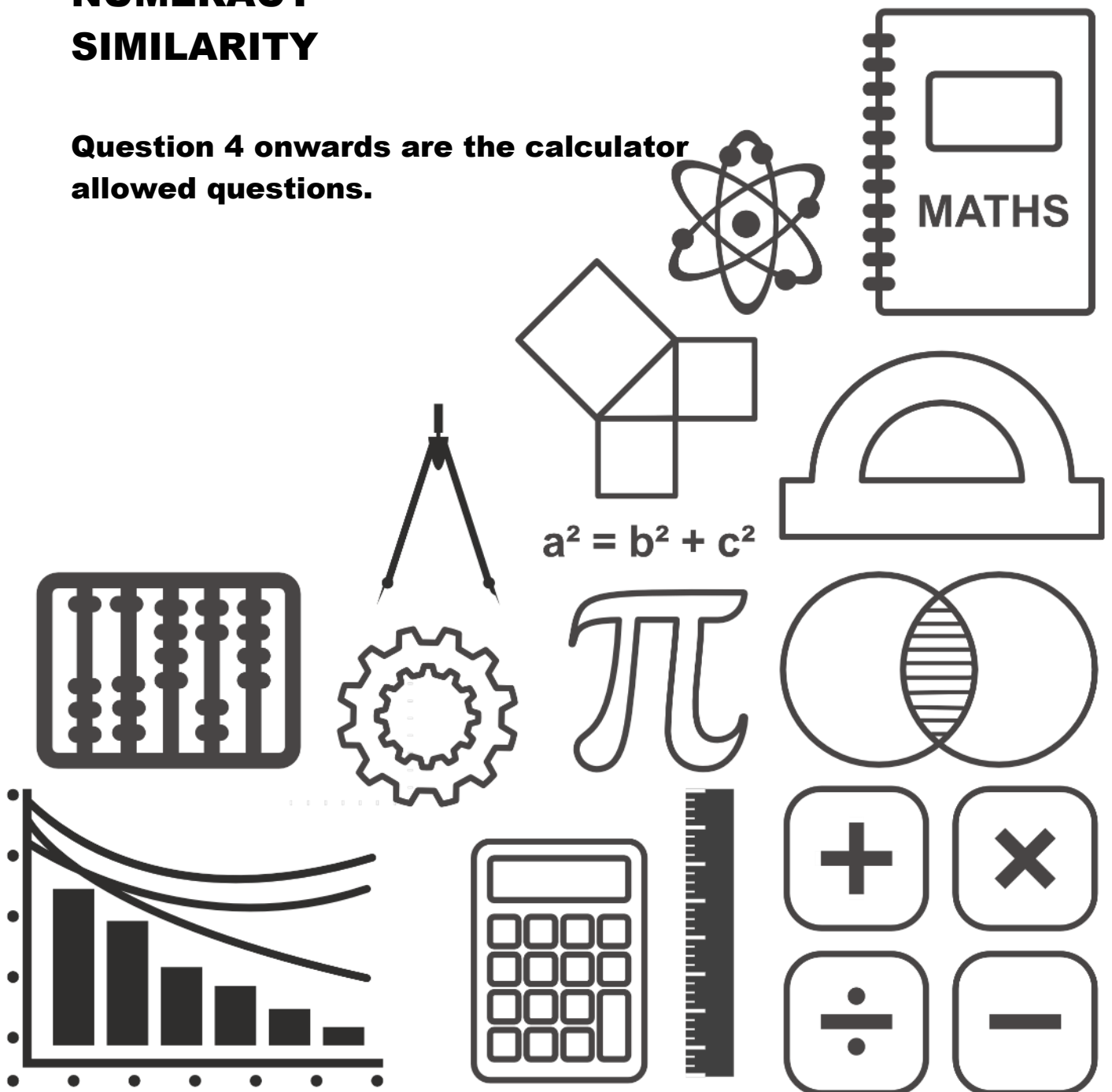


MATHSDIY

GCSE TOPIC BOOKLET NUMERACY SIMILARITY

Question 4 onwards are the calculator allowed questions.



1.

Mr Aston lives at 137 Ffordd Uchel.
He is ordering some new signs for his house and for his gatepost from a website.



Diagram not drawn to scale

All the signs available on the website are **mathematically similar**.

He selects a rectangular sign for the front of his house.
It has a length of 42 cm and a height of 24 cm.
The digits 1, 3 and 7 on the sign are all 18 cm high.

The rectangular sign Mr Aston is considering for his gatepost has a height of 20 cm.

- (a) Calculate the height of the digits 1, 3 and 7 on the sign Mr Aston is considering for his gatepost. [2]

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Height of the digits 1, 3 and 7 is cm

- (b) Mr Aston's gatepost is 30 cm wide.
Will the sign he is considering fit his gatepost?

Yes No

You must show all your working and give a reason for your answer. [3]

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2. Jade needs a new passport photograph.
A passport photograph must be 45 mm high by 35 mm wide.

Jade has a mathematically similar photograph that she could reduce in size to use as her new passport photograph.
The height of this photograph is 9 cm.
Calculate the width of this photograph. [2]

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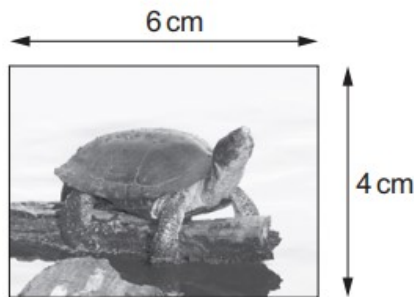
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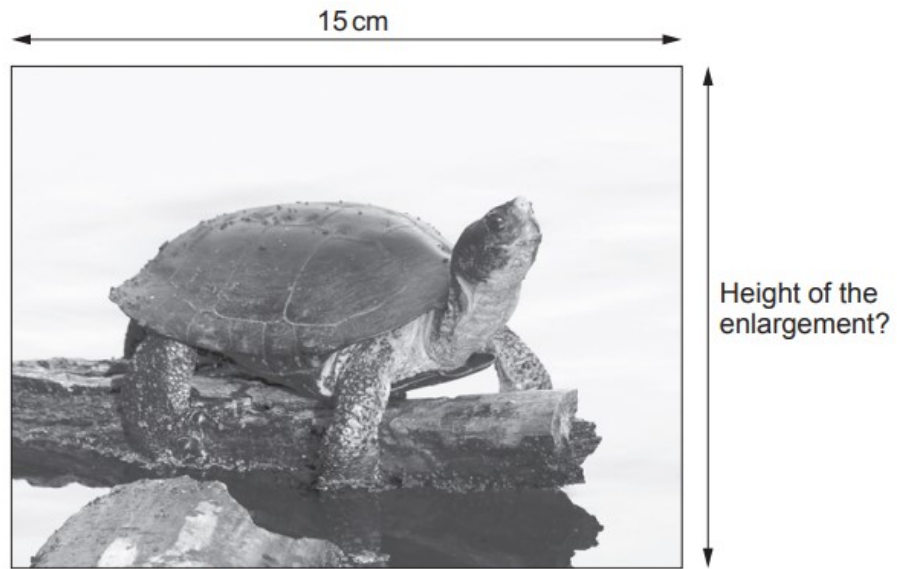
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3. Emlyn has a photograph that he wants to enlarge.
A diagram of the original photograph and a diagram of the enlargement are shown below.





Diagrams not drawn to scale

Calculate the height of the enlarged photograph.

[2]

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4. The Leaning Tower of Pisa stands on horizontal ground.
The vertical height of the tower on the higher side is 56.7 m.
The top of the tower is displaced 3.9 m horizontally.



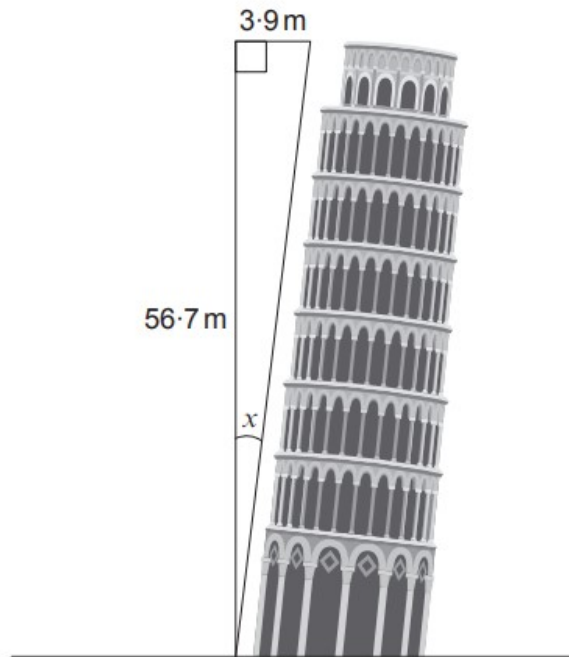


Diagram not drawn to scale

Ceri plans to make a poster that is mathematically similar to the Leaning Tower of Pisa.

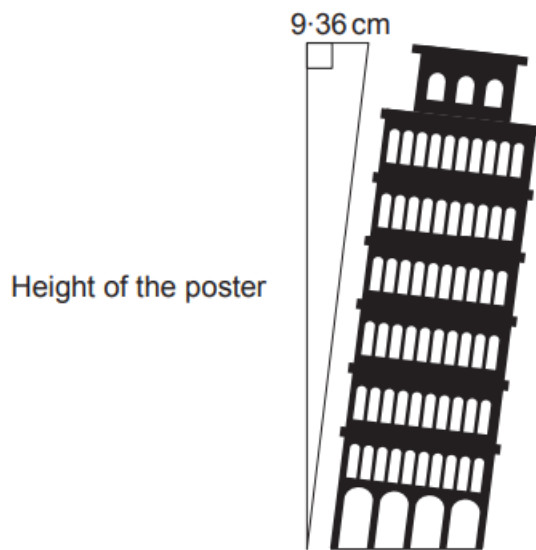


Diagram not drawn to scale

Calculate the height of the poster Ceri plans to make.

[2]

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5. The Headteacher decides to place signs around the school site to stop pupils using their bikes on grassed areas.

He introduces a new sign to pupils in the school newsletter.
The size of the sign in the newsletter is shown below.

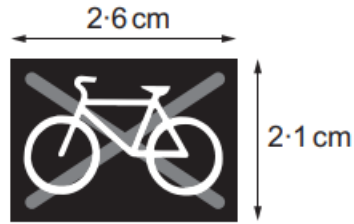


Diagram not drawn to scale

A mathematically similar new sign is placed near the side of the playing field.



Diagram not drawn to scale

It is 33.6 cm high.
How wide is this sign?

[2]

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Width is cm

6. The internal measurements of a tin of baked beans are:
- radius 3.6 cm,
 - height 9.3 cm.



A mathematically similar tin of baked beans has a radius of 4.2 cm.



Diagram not drawn to scale

Calculate the height of the larger tin of beans.

[2]

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