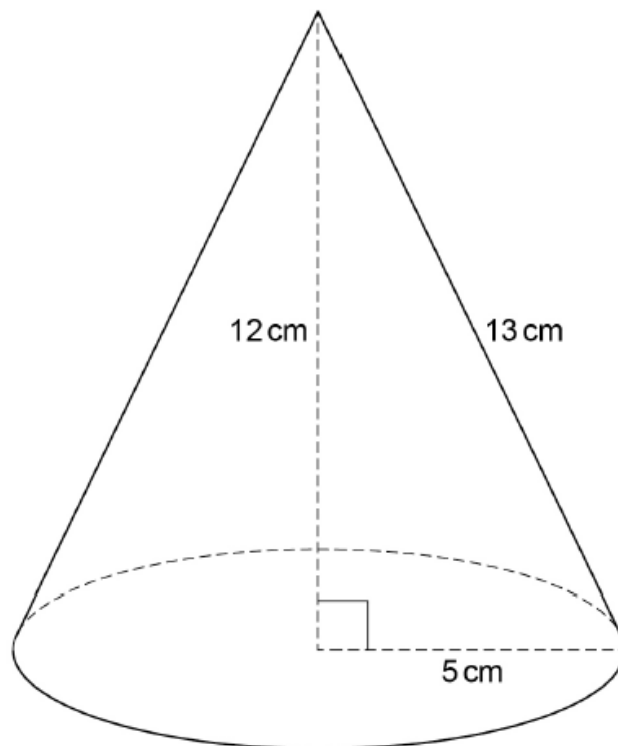


Mensuration and calculations – GCSE Mathematics

1. No.7

Here is a cone.



(a)

Curved surface area of a cone = $\pi r l$
 where r is the radius and l is the slant height

Beth tries to work out the curved surface area in terms of π

Curved surface area of the cone = $\pi \times 5 \times 12$
 $= 60\pi \text{ cm}^2$

What mistake has she made?

[1 mark]

- (b) Adam uses $\pi = 3$ to estimate the area of the **base** of the cone.

Work out his estimate.

[2 marks]

Answer _____ cm^2

- (c) Beth uses $\pi = 3.14$ to estimate the area of the **base** of the cone.

Is Beth's estimate more than or less than Adam's estimate?

Tick a box.

More than

☐

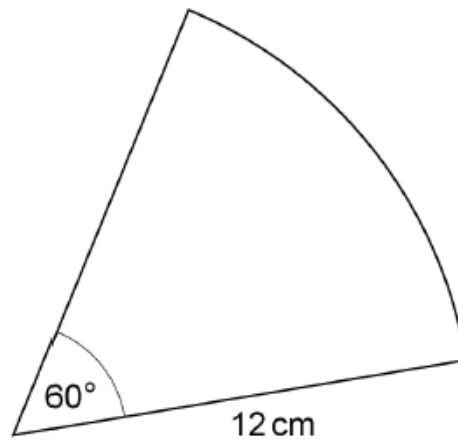
Less than

☐

Give a reason for your answer.

[1 mark]

2. No.12

A sector has radius 12 cm and angle 60° Not drawn
accurately

Work out the length of the arc.

Give your answer in terms of π

[3 marks]

Answer _____ cm

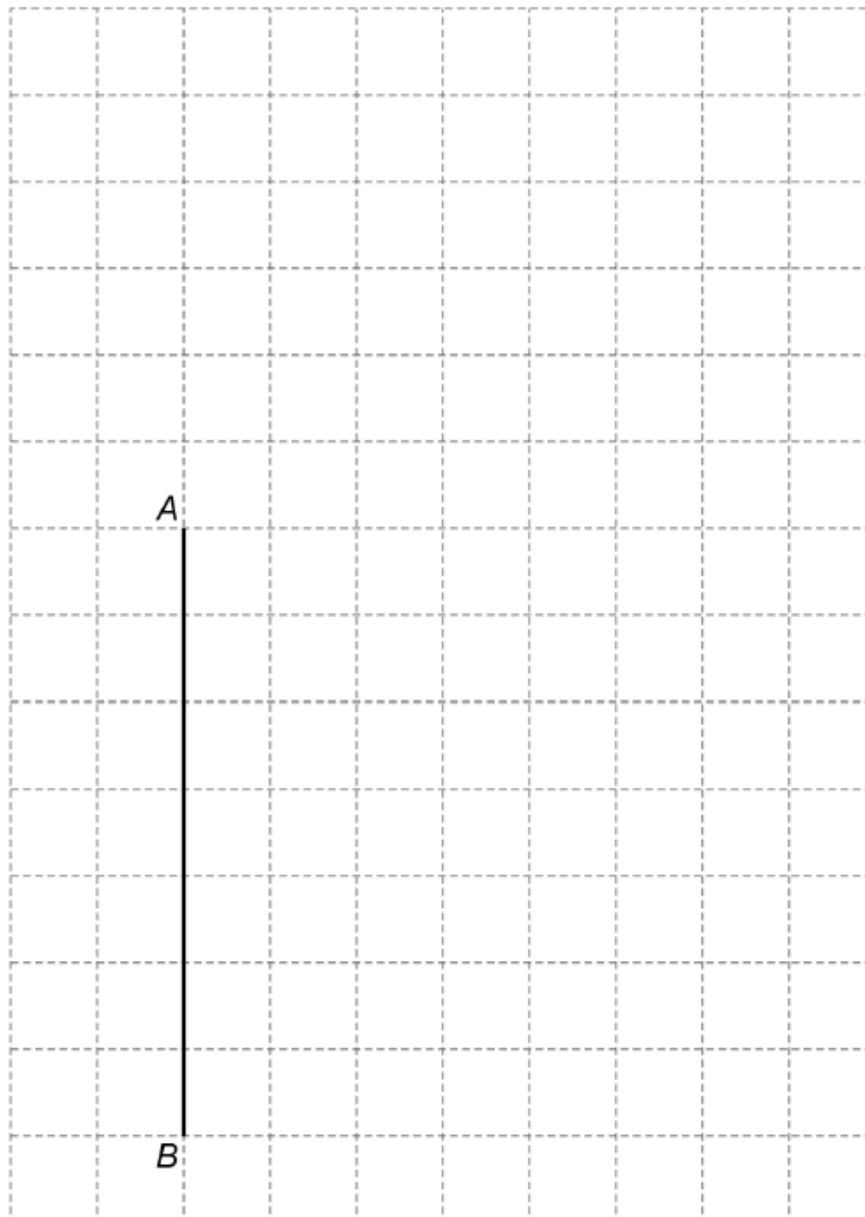
3. No.13

$ABCDE$ is a pentagon with $AB = 7\text{ cm}$

- $BC = 6\text{ cm}$
- AB and BC are perpendicular.
- AB and DC are equal and parallel.
- Area of the pentagon $= 54\text{ cm}^2$
- The pentagon has exactly **one** line of symmetry.

Complete a **labelled** drawing of the pentagon.

[4 marks]



[4 marks]

[illegible]

5. No.18

A diagonal of a rectangle is 23.7 cm long.

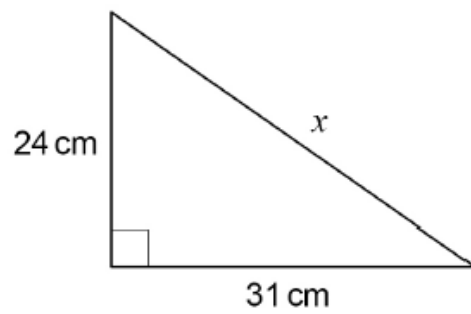
The diagonal makes an angle of 52° with a side of length x cm

Work out the value of x .

[3 marks]

$x =$ _____

7. No.2

Not drawn
accuratelyUse Pythagoras' theorem to work out the value of x .

Give your answer as a decimal.

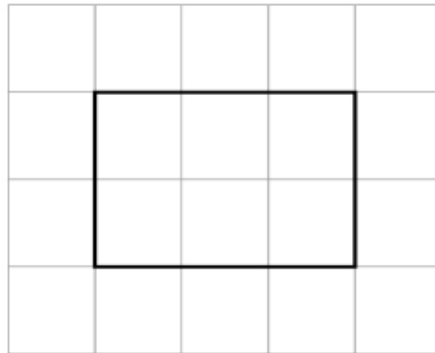
[3 marks]

Answer _____ cm

8. No.5

The front elevation of a cuboid is shown on this centimetre grid.

Front elevation

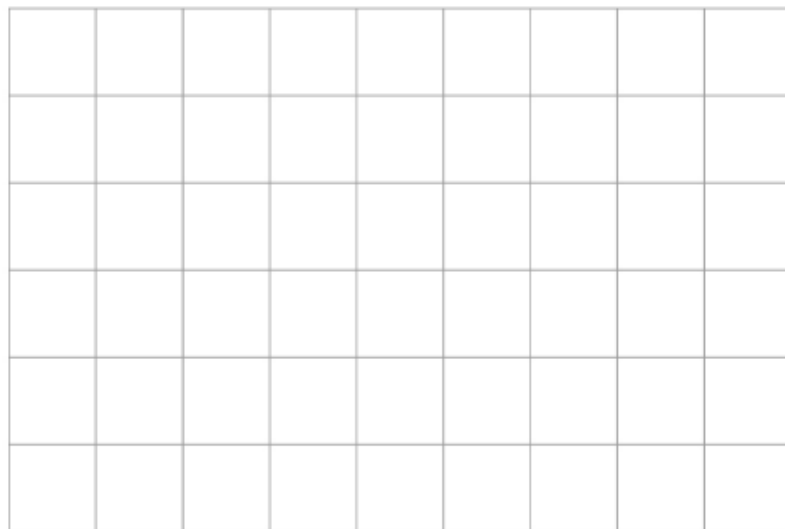


The volume of the cuboid is 42 cm^3

Draw the **side elevation** on this centimetre grid.

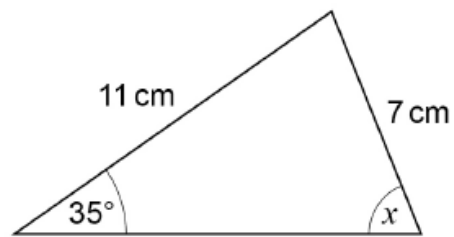
[2 marks]

Side elevation



9. No.18

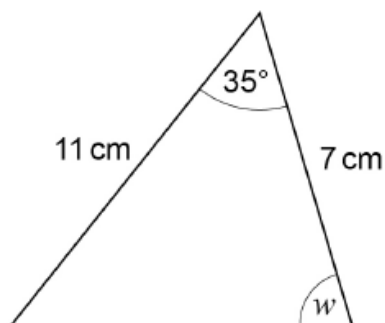
Here is triangle A.

Not drawn
accurately

- (a) Use the sine rule to show that $x = 64^\circ$ to the nearest degree.

[3 marks]

(b) Here is triangle B.



Not drawn
accurately

Anna thinks that w must be 64° to the nearest degree.

She says,

“This is because triangle B has two sides and one angle the same as triangle A.”

Without further calculation, is she correct?

Tick a box.

Yes

☐

No

☐

Give a reason for your answer.

[1 mark]
