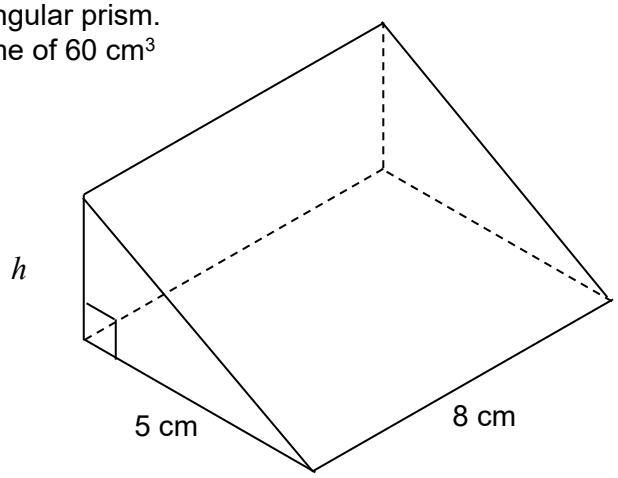
Topic Test 1 (20 minutes)

Volume - Higher

1 Here is a triangular prism.
It has a volume of 60 cm^3

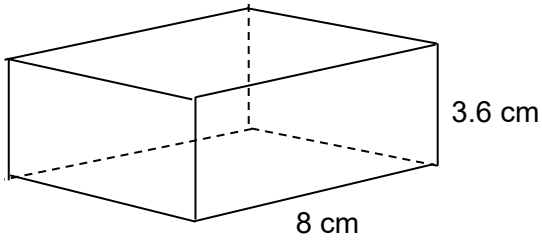


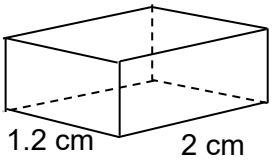
Work out the height, h.

[3 marks]

Answer _____ cm

2 These two cuboids are similar in shape.





2 (a) How many small cuboids will fill the large cuboid?

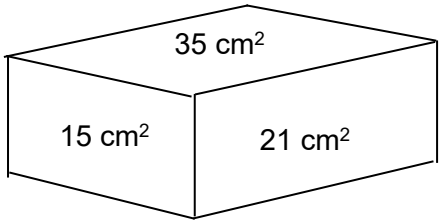
[2 marks]

Answer _____

2 (b) Which information, given on the diagrams, is **not** necessary to answer part (a).
Give a reason to support your answer,

[2 marks]

3 Here is a cuboid.
The **areas** of the top and two sides are shown.

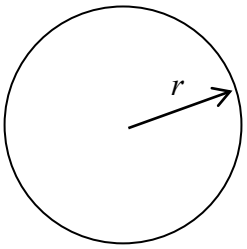


Work out the volume of the cuboid.

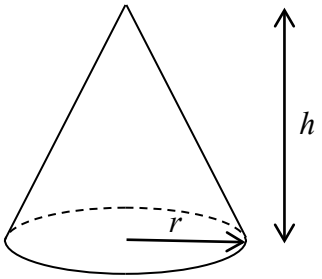
[3 marks]

Answer _____ cm³

4 Here are a sphere and a cone.
The formulas for their volumes are shown.
The radius of the sphere and the radius of the base of the cone are both r.



Volume = $\frac{4}{3}\pi r^3$



Volume = $\frac{1}{3}\pi r^2 h$

The volume of the cone is half of the volume of the sphere.
Work out the height of the cone in terms of r.

[2 marks]

Answer _____

5 The surface areas of two similar shapes are in the ratio 4 : 9
Work out the ratio of their volumes.

[1 mark]

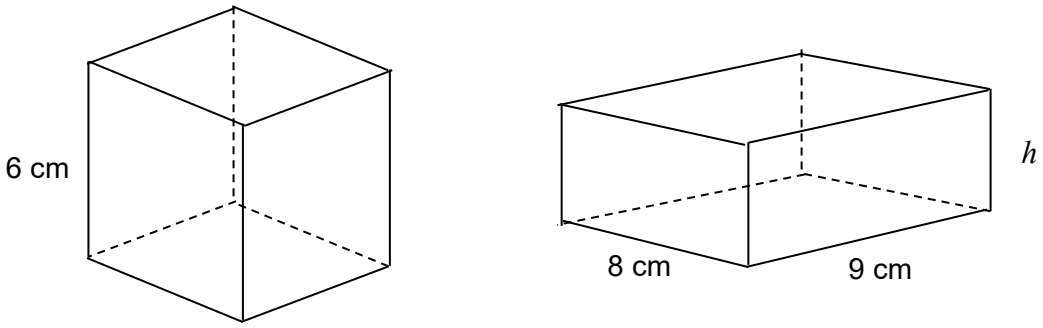
Answer _____

6 a, b and c are lengths.
Which of the following is not a measure of volume?
Circle your answer.

[1 mark]

$\frac{4}{3}\pi a^3$ abc $2(ab + bc + ac)$ $(a + b) \times c^2$

7 Here are a cube and a cuboid.
They have the same volume.



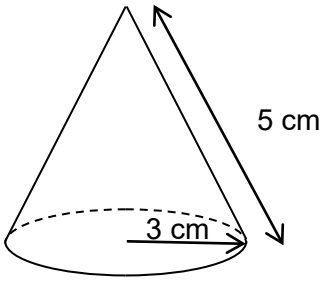
Work out the height, h, of the cuboid.

[2 marks]

Answer _____ cm

8 Work out the volume of this cone.
Give your answer in terms of π

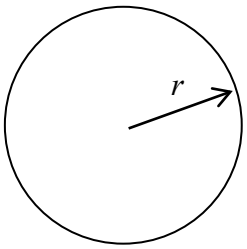
Volume = $\frac{1}{3}\pi r^2 h$



[2 marks]

Answer _____ cm^3

9 Here is a sphere



Volume = $\frac{4}{3}\pi r^3$

The volume of the sphere is 36π cm^3

Work out the value of r.

[2 marks]

Answer _____