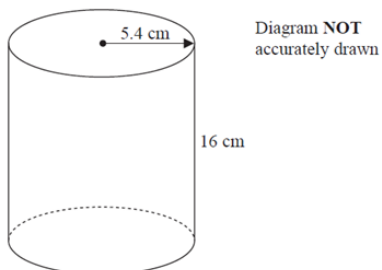


## Cylinders and cuboids SA and V

### Question 1

A cylinder has radius 5.4 cm and height 16 cm.



Work out the volume of the cylinder.

Give your answer correct to the nearest whole number.

.....  $cm^3$

**(2 marks)**

### Question 2

A cuboid has a volume of  $40cm^3$ , length of  $5cm$  and width of  $2cm$

Work out the height of the cuboid.

..... cm

### Question 3

The diagram shows a cube and a cuboid.

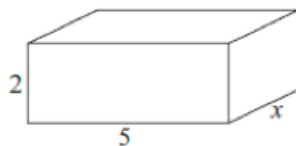
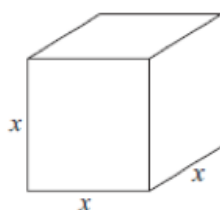


Diagram NOT  
accurately drawn

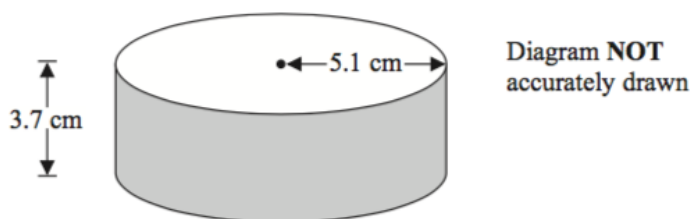
All the measurements are in cm.

The volume of the cube is  $100 cm^3$  more than the volume of the cuboid.

Show that  $x^3 + ax = b$  where  $a$  and  $b$  are integers to be found.

.....

**(2 marks)**

**Question 4**

A solid cylinder has a radius of 5.1 cm and a height of 3.7 cm.

Work out the **total** surface area of the cylinder.

Give your answer correct to 3 significant figures.

.....  $cm^2$

**(3 marks)**

**Question 5**

The piece of wood is 3 cm by 20 cm by 1.2 m.

The mass of the piece of wood is 8 kg.

The piece of wood will float in sea water if the density of the wood is less than the density of the sea water.

In a large pool, 1 litre of sea water has a mass of 1030 g.

Will the piece of wood float in this pool?

Determine the densities of the water and the wood (to 3 significant figures) that would enable you to make this conclusion.

**(4 marks)**

**Question 6**

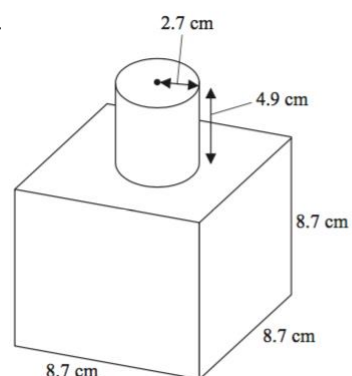
The diagram shows a shape made from a solid cube and a solid cylinder.

The cube has sides of length 8.7 cm.

The cylinder has a radius of 2.7 cm and a height of 4.9 cm.

Calculate the total surface area of the solid shape.

Give your answer correct to 3 significant figures.



.....  $cm^2$

**(3 marks)**