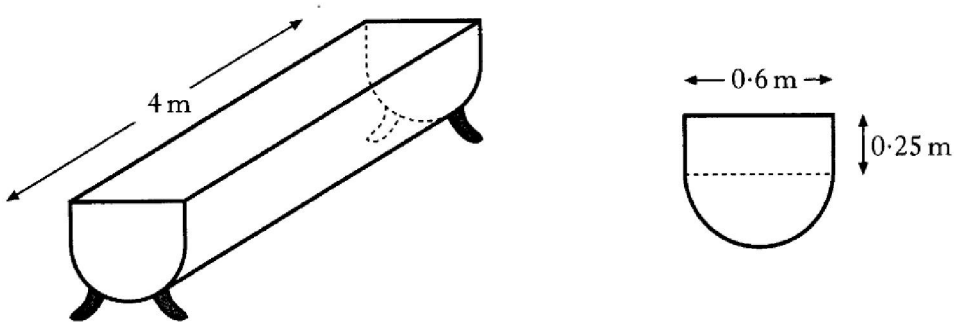


AREA & VOLUME. A question that usually incorporates Rounding to either Decimal places or, more Commonly “significant figures”

It is important that you show the number you are rounding, before writing your rounded solution, to gain this mark.

5. A feeding trough, 4 metres long, is prism-shaped.

The uniform cross-section is made up of a rectangle and semi-circle as shown below.



Find the volume of the trough, **correct to 2 significant figures**.

5

5. A cylindrical soft drinks can is 15 centimetres in height and 6.5 centimetres in diameter.

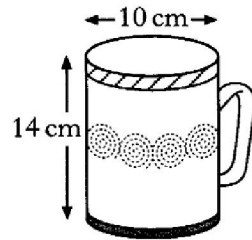
A new cylindrical can holds the same volume but has a reduced height of 12 centimetres.

What is the diameter of the new can?

Give your answer **to 1 decimal place**.

4

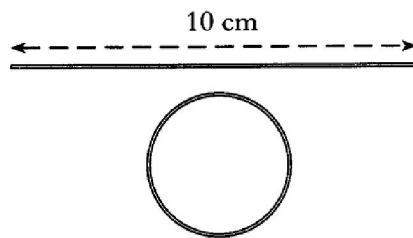
4. A mug is in the shape of a cylinder with diameter 10 centimetres and height 14 centimetres.



- (a) Calculate the volume of the mug.  
 (b) 600 millilitres of coffee are poured in.  
 Calculate the depth of the coffee in the cup.

2	3

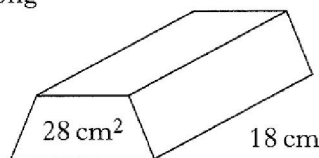
12. A piece of gold wire 10 centimetres long is made into a circle.



The circumference of the circle is equal to the length of the wire.  
 Show that the area of the circle is **exactly**  $\frac{25}{\pi}$  square centimetres.

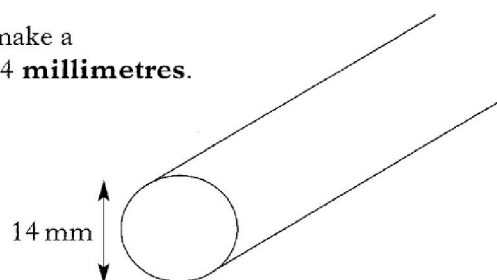
4	4

7. (a) A block of copper 18 centimetres long is prism shaped as shown.



The area of its cross section is 28 square centimetres.  
 Find the volume of the block.

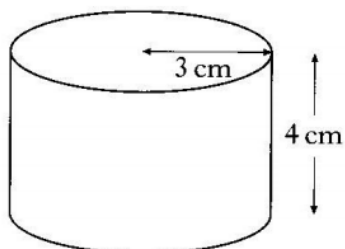
- (b) The block is melted down to make a cylindrical cable of diameter 14 millimetres.



Calculate the length of the cable.

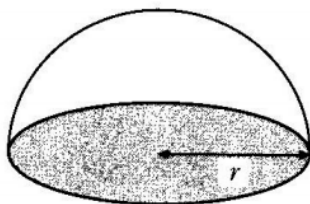
1	4

12. (a) A cylindrical paperweight of radius 3 centimetres and height 4 centimetres is filled with sand.



Calculate the volume of sand in the paperweight.

- (b) Another paperweight, in the shape of a hemisphere, is filled with sand.



It contains the same volume of sand as the first paperweight.

Calculate the radius of the hemisphere.

[The volume of a hemisphere with radius  $r$  is given by the formula,  $V = \frac{2}{3}\pi r^3$ ].