

Volume and Surface Area of Cylinders Past Paper Questions



Questions

Q1.

The diagram shows a large tin of pet food in the shape of a cylinder.

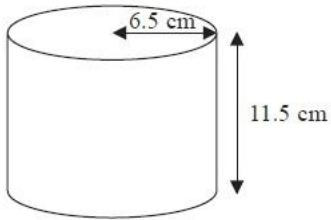


Diagram **NOT**
accurately drawn

The large tin has a radius of 6.5 cm and a height of 11.5 cm.

A pet food company wants to make a new size of tin.

The new tin will have a radius of 5.8 cm.

It will have the same volume as the large tin.

Calculate the height of the new tin.

Give your answer correct to one decimal place.

..... cm

(Total for Question is 3 marks)



Q2.

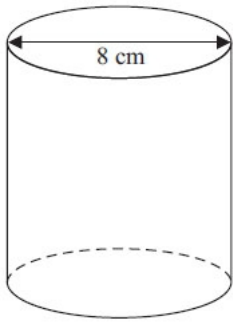


Diagram **NOT**
accurately drawn

Ella is designing a glass in the shape of a cylinder.
The glass must hold a minimum of $\frac{1}{2}$ litre of liquid.
The glass must have a diameter of 8 cm.
Calculate the minimum height of the glass.

.....
(Total for Question is 5 marks)

Q3.

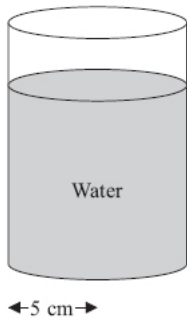


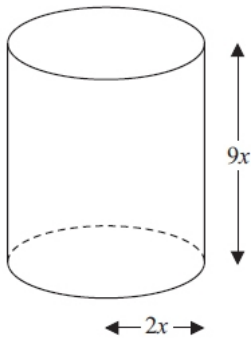
Diagram **NOT**
accurately drawn

Here is a vase in the shape of a cylinder.
The vase has a radius of 5 cm.
There are 1000 cm^3 of water in the vase.
Work out the depth of the water in the vase.
Give your answer correct to 1 decimal place.

.....
(Total for Question is 3 marks)



Q4.



The diagram shows a solid metal cylinder.

Diagram **NOT** accurately drawn

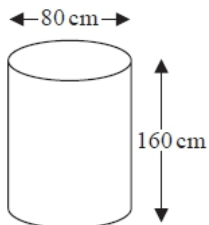
The cylinder has base radius $2x$ and height $9x$.

The cylinder is melted down and made into a sphere of radius r .

Find an expression for r in terms of x .

.....
(Total for Question is 3 marks)

Q5.



Karina has 4 tanks on her tractor.

Each tank is a cylinder with diameter 80 cm and height 160 cm.

The 4 tanks are to be filled completely with a mixture of fertiliser and water.

The fertiliser has to be mixed with water in the ratio 1 : 100 by volume.

Karina has 32 litres of fertiliser.

1 litre = 1000 cm^3

Has Karina enough fertiliser for the 4 tanks?

You must show how you get your answer.

(Total for question = 4 marks)



Q6.

The diagram shows a container used to store oil.

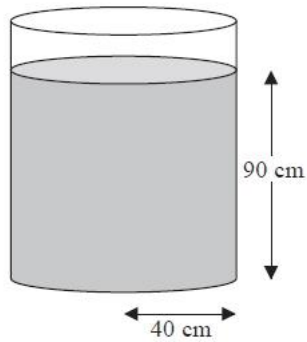


Diagram **NOT**
accurately drawn

The container is in the shape of a cylinder of radius 40 cm.

The height of the oil in the container is 90 cm.

65 litres of oil are taken from the container.

1 litre = 1000 cm^3 .

Work out the new height of the oil in the container.

Give your answer correct to one decimal place.

.....cm

(Total for Question is 4 marks)