

Questions

Q1.

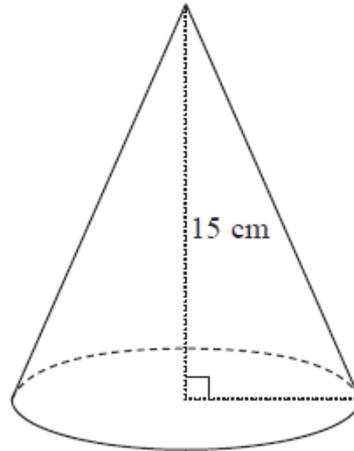


Diagram NOT
accurately drawn

A solid cone has a height of 15 cm.
The volume of the cone is $320\pi \text{ cm}^3$

Work out the curved surface area of the cone.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for question = 5 marks)

Q2.

A cylinder has diameter 12 cm and length 30 cm.

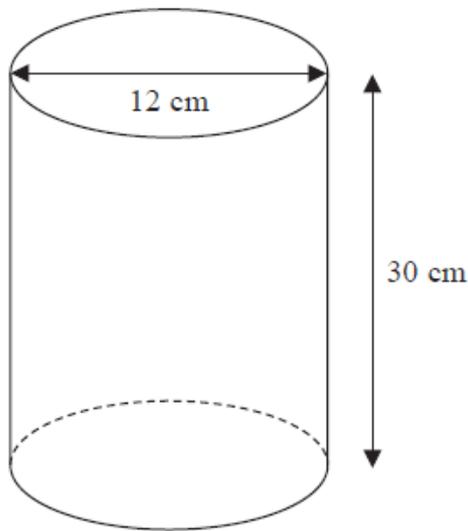


Diagram NOT accurately drawn

Work out the curved surface area of the cylinder.
Give your answer correct to 3 significant figures.

..... cm²

(Total for Question is 3 marks)

Q3.

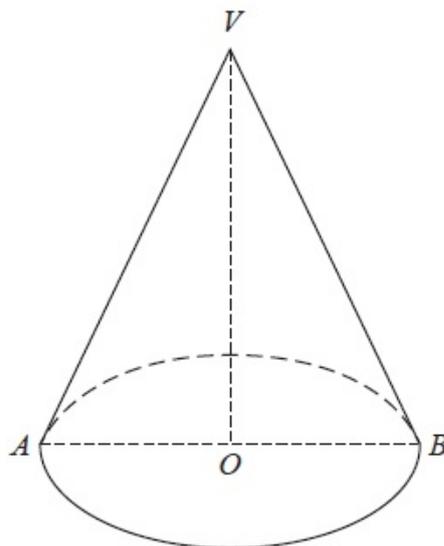


Diagram NOT accurately drawn

The diagram shows a solid cone.
The base of the cone is a horizontal circle, centre *O*, with radius 4.5 cm.
AB is a diameter of the base and *OV* is the vertical height of the cone.
The curved surface area of the cone is 130 cm²

Calculate the size of the angle *AVB*.

Give your answer correct to 1 decimal place.

..... °

(Total for Question is 4 marks)

Q4.

The diagram shows a solid cone.

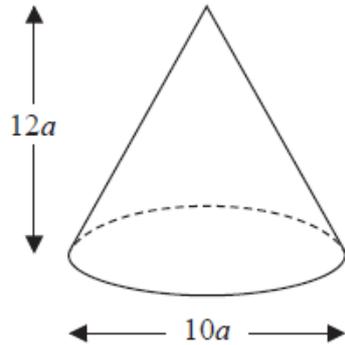


Diagram NOT accurately drawn

The diameter of the base of the cone is $10a$ cm.
The height of the cone is $12a$ cm.

The total surface area of the cone is 360π cm²
The volume of the cone is $k\pi$ cm³, where k is an integer.

Find the value of k .

$k = \dots\dots\dots$

(Total for Question is 6 marks)

Q5.

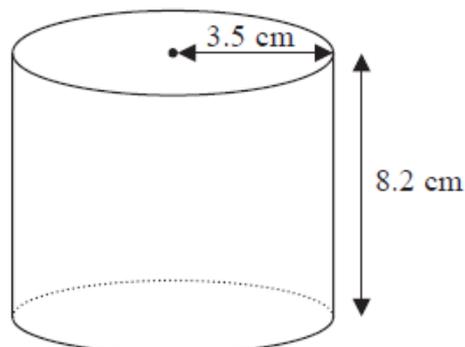


Diagram NOT accurately drawn

A solid cylinder has radius 3.5 cm and height 8.2 cm.

Work out the **total** surface area of the cylinder.
 Give your answer correct to 3 significant figures.

..... cm²

(Total for question = 3 marks)

Q6.

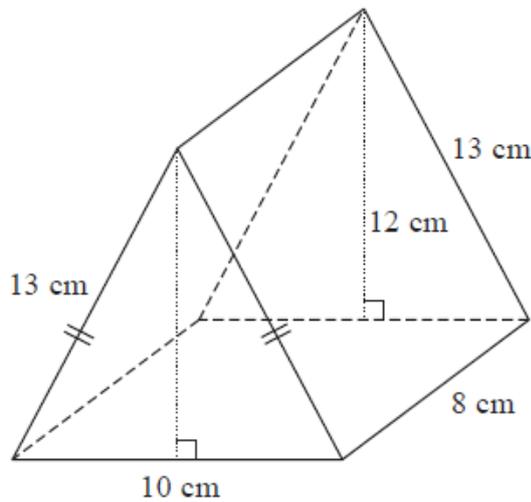


Diagram **NOT**
 accurately drawn

The diagram shows a prism.
 The cross-section of the prism is an isosceles triangle.
 The lengths of the sides of the triangle are 13 cm, 13 cm and 10 cm.
 The perpendicular height of the triangle is 12 cm.
 The length of the prism is 8 cm.

Work out the total surface area of the prism.

..... cm²

(Total for Question is 3 marks)

Q7.

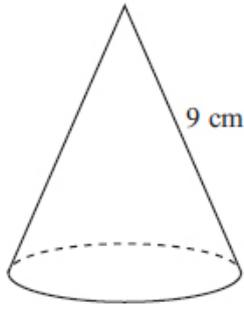


Diagram NOT accurately drawn

A solid cone has a slant height of 9 cm.
The **curved** surface area of the cone is 100 cm^2 .

Calculate the volume of the cone.
Give your answer correct to 3 significant figures.

..... cm^3

(Total for question is 5 marks)

Q8.

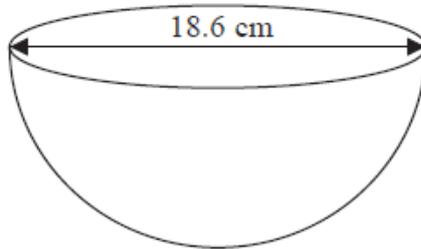


Diagram NOT accurately drawn

The diagram shows a hemisphere with a diameter of 18.6 cm.

Work out the volume of the hemisphere.
Give your answer correct to 3 significant figures.

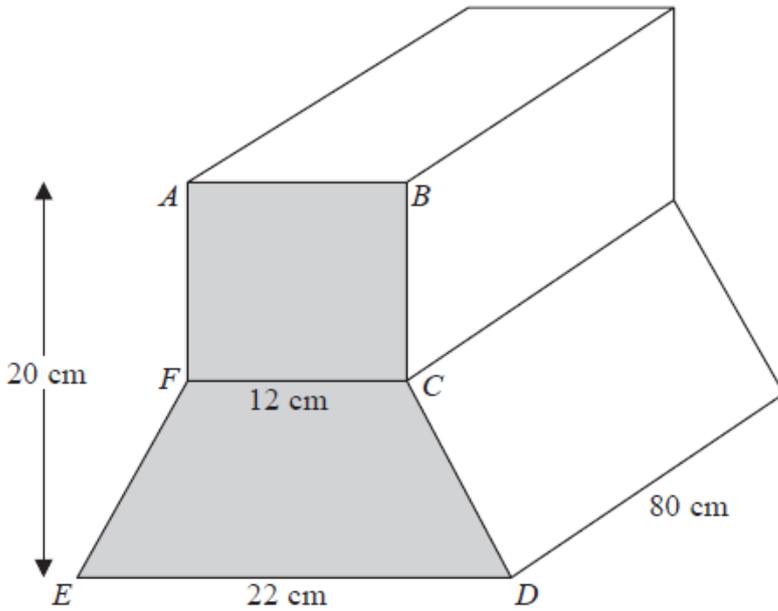
..... cm^3

(Total for question = 3 marks)

Q9.

Here is a prism.

Diagram NOT accurately drawn



$ABCDEF$ is a cross section of the prism.

$ABCF$ is a square of side 12 cm.

$FCDE$ is a trapezium.

$ED = 22$ cm.

The height of the prism is 20 cm.

The length of the prism is 80 cm.

Work out the total volume of the prism.

..... cm^3

(Total for question = 5 marks)

Q10.

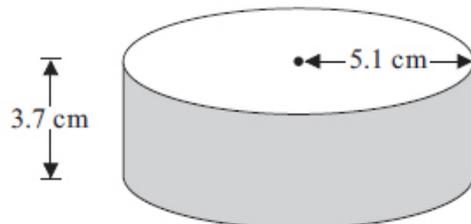


Diagram NOT accurately drawn

A solid cylinder has 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

(Total for question = 3 marks)

Q11.

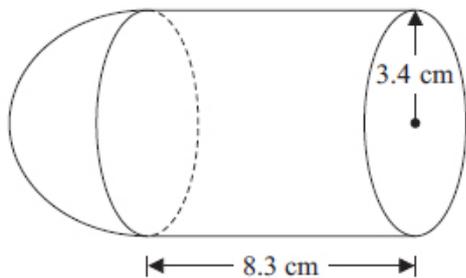


Diagram NOT accurately drawn

The diagram shows a shape made from a solid cylinder and a solid hemisphere. The cylinder has a radius of 3.4 cm and a length of 8.3 cm. The hemisphere has a radius of 3.4 cm.

Calculate the total surface area of the solid shape. Give your answer correct to 3 significant figures.

.....cm²

(Total for question = 4 marks)

Q12.

The diagram shows a cylinder and a sphere.

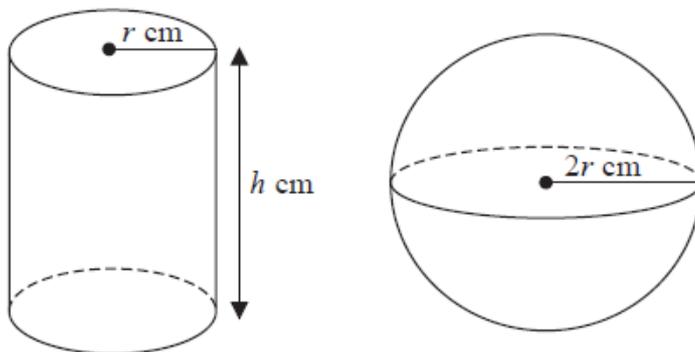


Diagram NOT accurately drawn

The cylinder has radius r cm and height h cm. The sphere has radius $2r$ cm.

The volume of the cylinder is equal to the volume of the sphere. Find an expression for h in terms of r . Give your answer in its simplest form.

.....

(Total for question = 3 marks)

Q13.

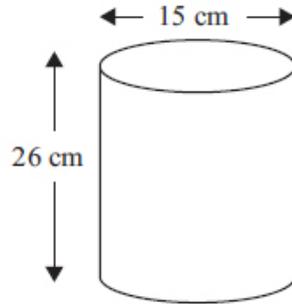


Diagram NOT accurately drawn

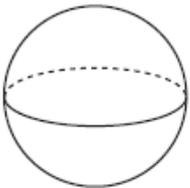
A cylinder has a diameter of 15 cm and a height of 26 cm.
Work out the volume of the cylinder.

Give your answer correct to 3 significant figures.

..... cm³

(Total for question is 3 marks)

Q14.



A sphere has a surface area of 81π cm².

Work out the volume of the sphere.
Give your answer correct to 3 significant figures.

..... cm³

(Total for Question is 4 marks)

Q15.

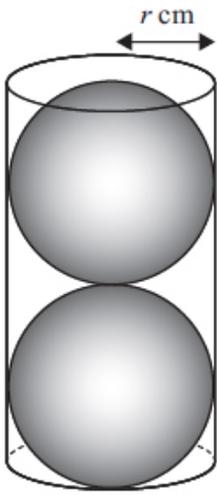


Diagram NOT
accurately drawn

Two solid spheres, each of radius r cm, fit exactly inside a hollow cylinder.
The radius of the cylinder is r cm.
The height of the cylinder is equal to $4r$ cm.

The volume of the space inside the cylinder, not occupied by the spheres, is $\frac{125}{6}\pi$ cm³

Calculate the value of r .

Show your working clearly.

$r = \dots\dots\dots$

(Total for question = 5 marks)