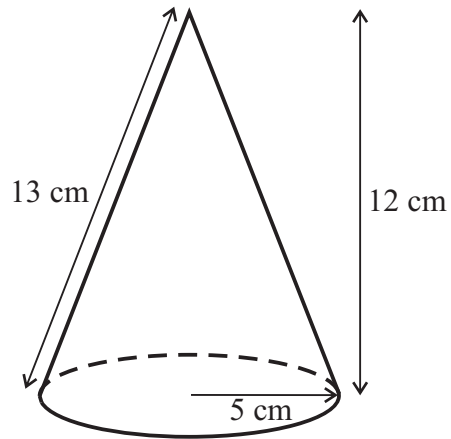


$$\text{Volume of a cone} = \frac{1}{3}\pi r^2 h$$

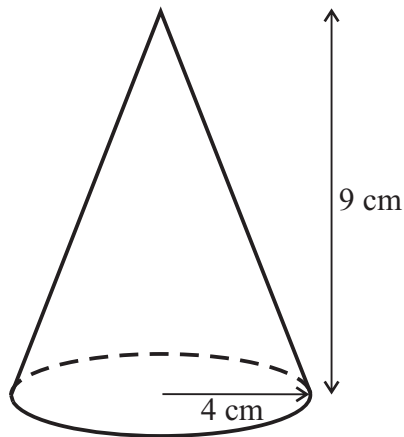
$$\text{Curved surface area} = \pi r l$$



- 1) a) Work out the volume of the cone.
b) Work out the curved surface area of the cone.
c) The total surface area of the cone.



- 2) Work out the volume of the cone, leaving your answer in terms of π .

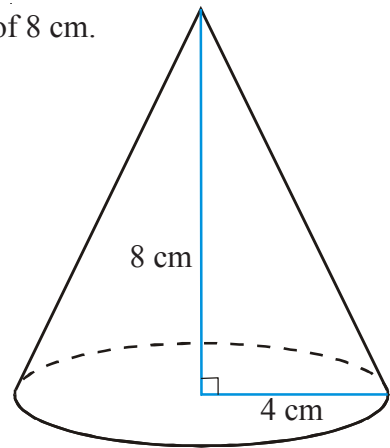


Spheres and Cones



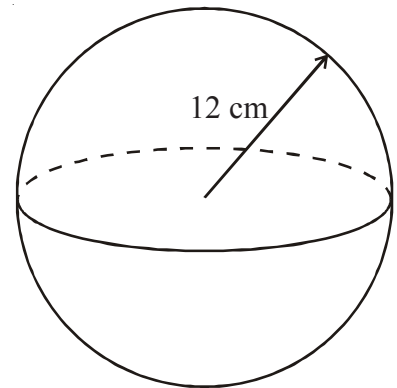
1) A cone has a base radius of 4 cm and a vertical height of 8 cm.

- Calculate the volume of the cone.
Take π to be 3.142.
Give your answer correct to 3 significant figures.
- Use Pythagoras' Theorem to find the slant height of the cone.
Give your answer correct to 1 decimal place.
- Find the curved surface area of the cone.
Take π to be 3.142.
Give your answer correct to 3 significant figures.



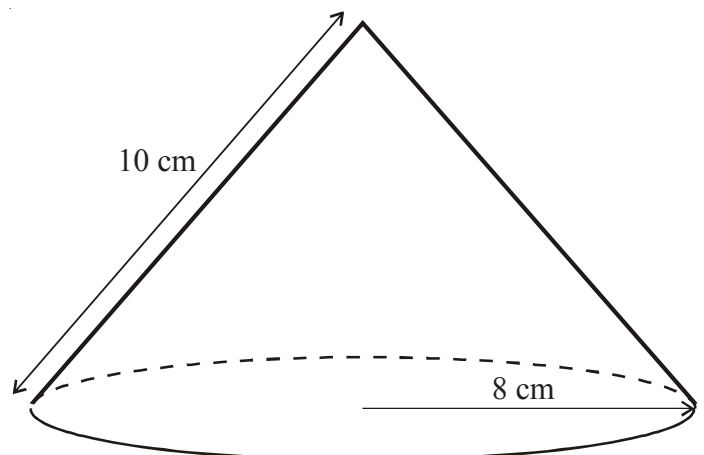
2) A sphere has a radius of 12 cm.

- Calculate the volume of the sphere.
Take π to be 3.142.
Give your answer correct to 3 significant figures.
- Find the curved surface area of the sphere.
Take π to be 3.142.
Give your answer correct to 3 significant figures.

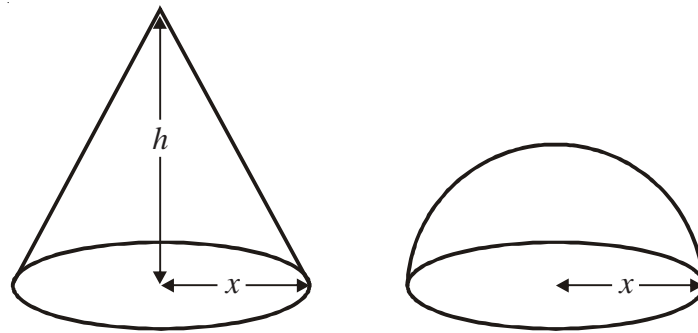


3) A cone has a base radius of 8 cm and a slant height of 10 cm.

Calculate the volume of the cone.
Leave your answer in terms of π .



1)



The diagram shows a solid cone and a solid hemisphere.

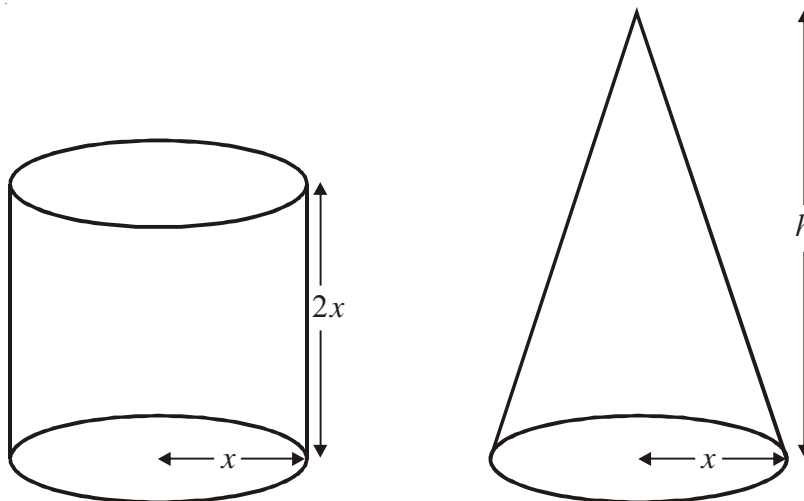
The cone has a base of radius x cm and a height of h cm.

The hemisphere has a base of radius x cm.

The surface area of the cone is equal to the surface area of the hemisphere.

Find an expression for h in terms of x .

2)



A cylinder has base radius x cm and height $2x$ cm.

A cone has base radius x cm and height h cm.

The volume of the cylinder and the volume of the cone are equal.

Find h in terms of x .

Give your answer in its simplest form.