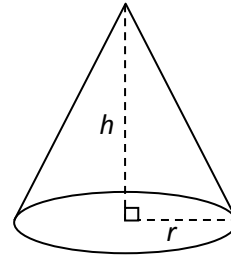


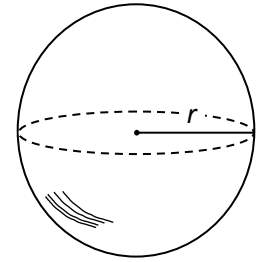
**Calculators are permitted but working must be shown.**

**Essential knowledge:**

- Calculate the volume of a cone with:
  - radius = 3cm, height = 6cm
  - diameter = 16mm, h = 12mm



$$V = \frac{1}{3}\pi r^2 h$$

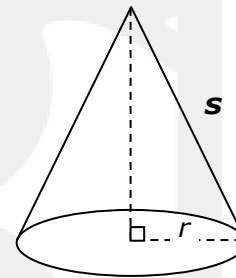


$$V = \frac{4}{3}\pi r^3$$

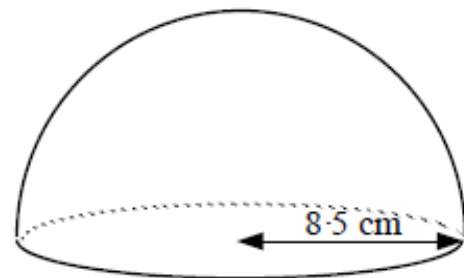
- Calculate the volume of a sphere with:
  - $r = 6\text{cm}$
  - $d = 4\text{m}$

**Unit level:**

- A cone has a base diameter of 10cm and a **slant height** of 13cm. Calculate the volume of the cone.

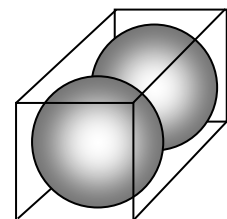


- Calculate the volume of a **Hemisphere** with radius 8.5 centimetres.

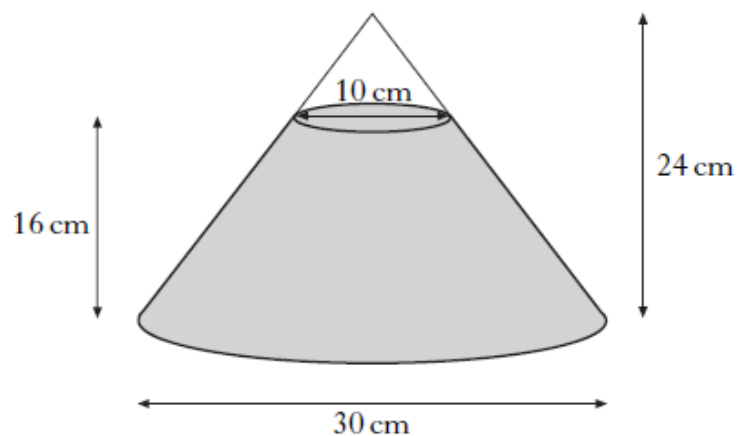


**Assessment level:**

- Two **identical** solid spheres are packed in the smallest box possible which is a cuboid in shape. Calculate the amount of unoccupied space left in the box given that the **radius** of each sphere is 20cm.

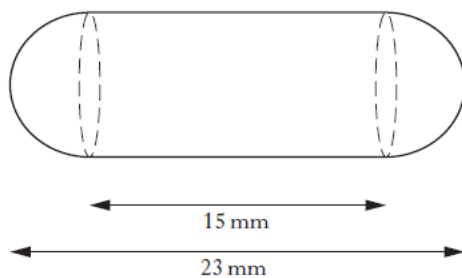


6. A glass ornament in the shape of a cone is partly filled with coloured water



What is the volume of the water to 2 significant figures?

7. A health food shop produces cod liver oil capsules. Each capsule is in the shape of a cylinder with hemispherical ends.



Calculate the volume on this capsule. (NB for a Cylinder:  $V = \pi r^2 h$ )

ACADEMY