

4th May



Corbettmaths

Make v the subject

$$E = \frac{1}{2}mv^2$$

$$2E = mv^2$$

$$\frac{2E}{m} = v^2$$

$$v = \sqrt{\frac{2E}{m}}$$

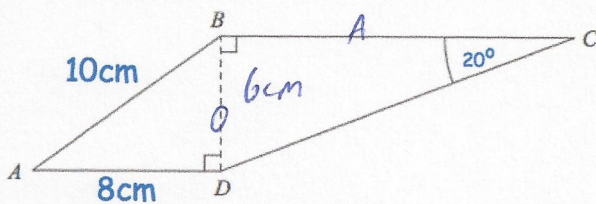
Simplify fully

$$\sqrt{5} \times \sqrt{15}$$

$$\sqrt{75}$$

$$\sqrt{25} \times \sqrt{3}$$

$$5\sqrt{3}$$



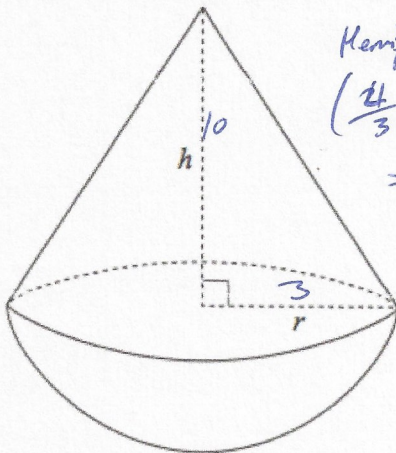
$$BD^2 + 8^2 = 10^2$$

$$BD^2 + 64 = 100$$

$$BD^2 = 36 \quad BD = 6$$

$$BC = \frac{6}{\tan 20} = 16.4849 \text{ cm}$$

Find BC



Hemisphere:

$$\left(\frac{2}{3}\pi r^3\right) \div 2$$

$$= 56.5486$$

The radius of the cone is 3cm.
The height of the cone is 10cm.

Calculate the volume of the solid.

$$\text{Cone: } \frac{1}{3} \times \pi r^2 h$$

$$\frac{1}{3} \times \pi \times 3^2 \times 10$$

$$= 94.2477\dots$$

Total volume:

$$150.796 \text{ cm}^3$$

The diagram shows a solid made up of a cone and a hemisphere.