GCSE HIGHER · REVISION MAT 5

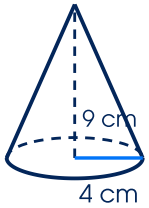
Circles, cones, spheres and pyramids

1 Find the area of a circle of radius 2.5 cm, to 1 d.p.



2 Find the volume of a cone with radius 4 cm and height 9 cm.

Give your answer in terms of π.

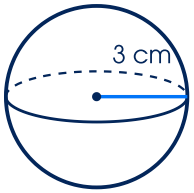


3 Explain why the perimeter of a semicircle is not just half the circumference.

4 A circle has area 50 cm².

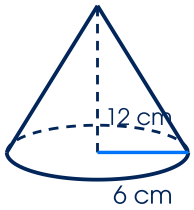
Find its circumference, to 1 d.p.

5 Show that a sphere of radius 3 cm has surface area 36π cm².

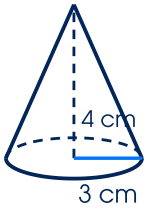


6 A frustum is made by cutting a cone of radius 2 cm and height 4 cm from the top of a cone of radius 6 cm and height 12 cm.

Find the volume of the frustum.

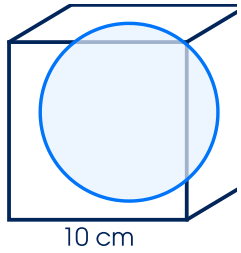


7 Show that a cone with radius 3 cm and height 4 cm has total surface area 24π cm².



8 A sphere fits exactly inside a cube of side 10 cm.

What percentage of the cube does it fill?



ANSWERS · REVISION MAT 5

Circles, cones, spheres and pyramids

1 $\pi \times 6.25$

19.6 cm²

2 $\frac{1}{3}\pi \times 16 \times 9$

48π cm³

3 **You must add the diameter (the straight edge).**

4 $r = \sqrt{\frac{50}{\pi}} = 3.99$

25.1 cm

5 $4\pi \times 9$

= 36π

6 Large: 144π; small: $\frac{16}{3}\pi$

$\frac{416}{3}\pi$

435.6 cm³

7 Slant 5 cm

$15\pi + 9\pi$

= 24π

8 $\frac{4}{3}\pi \times 125 = 523.6$ cm³

52.4%

Mr&Mrs MATHS