

Exercise 4G

5b



$$\begin{aligned}\text{Vol} &= \pi r^2 h_1 + \frac{1}{3} \pi r^2 h_2 \\ &= \pi \times 4^2 \times 40 + \frac{1}{3} \pi \times 4^2 \times 15 \\ &= 640\pi + 80\pi \\ &= 720\pi \text{ mm}^3\end{aligned}$$

Find surface area of shape above



Pythagoras

$$\begin{aligned}x^2 &= 4^2 + 15^2 \\ x^2 &= 16 + 225 \\ x^2 &= 241 \\ x &= \sqrt{241} = 15.5 \text{ mm}\end{aligned}$$

$$\begin{aligned}\text{Surface Area} &= \text{Circle on end} + \text{Curved Surface of cylinder} + \text{Curved Surface of cone} \\ &= \pi r^2 + 2\pi r h_1 + \pi r L \\ &= \pi \times 4^2 + 2 \times \pi \times 4 \times 40 + \pi \times 4 \times 15.5 \\ &= 1250 \text{ mm}^2\end{aligned}$$

Capacity

$$\begin{aligned}1000 \text{ cm}^3 &= 1 \text{ litre} \\ 1 \text{ m}^3 &= 1000 \text{ litres}\end{aligned}$$

How much water is required to fill a swimming pool that is a cuboid 50m long x 12 wide x 2m deep

$$\text{Vol} = 50 \times 12 \times 2 = 1200 \text{ m}^3$$

$$\text{Capacity} = 1200 \times 1000 = 1,200,000 \text{ litres}$$

Exercise Find capacity of cuboid pool

$$6 \text{ m} \times 5 \text{ m} \times 1.5 \text{ m}$$

$$6 \times 5 \times 1.5 = 45 \text{ m}^3$$

$$= 45 \times 1000 \text{ litres}$$

$$= 45,000 \text{ litres}$$