



### Exercise 13B

Question 9:

Here,  $(r + h) = 37 \text{ m}$   $[\because \text{given}]$

And, total surface area =  $2\pi r(r + h) = 1628\text{m}^2$

$$\Rightarrow 2\pi \times 37 = 1628\text{m}^2$$

$$\Rightarrow 2 \times \frac{22}{7} \times r \times 37 = 1628$$

$$\Rightarrow r = \frac{1628 \times 7}{44 \times 37} = 7 \text{ m}$$

And  $(r + h) = 37 \text{ m}$

$$\Rightarrow (7 + h) = 37$$

$$\Rightarrow h = 37 - 7 = 30 \text{ m}$$

$$\begin{aligned} \text{Volume} &= \pi r^2 h \\ &= \left( \frac{22}{7} \times 7 \times 7 \times 30 \right) \text{m}^3 = 4620 \text{m}^3. \end{aligned}$$

Question 10:

Curved surface area =  $2\pi rh$

Total surface area =  $2\pi r(h + r)$

Since they are in the ratio of 1: 2

$$\therefore \frac{2\pi rh}{2\pi r(h + r)} = \frac{1}{2}$$

$$\Rightarrow \frac{h}{h + r} = \frac{1}{2}$$

$$\Rightarrow 2h = h + r$$

$$\Rightarrow 2h - h = r$$

$$\Rightarrow h = r$$

$$2\pi r(h + r) = 616 \text{ cm}^2$$

$$\Rightarrow 4\pi r^2 = 616 \text{ cm}^2 \quad [\text{Putting } h = r]$$

$$\Rightarrow 4 \times \frac{22}{7} \times r^2 = 616$$

$$\Rightarrow r^2 = \frac{616 \times 7}{88} = 49$$

$$\Rightarrow r = \sqrt{49} = 7 \text{ cm}$$

Then,  $r = 7 \text{ cm}$  and  $h = 7 \text{ cm}$

$$\begin{aligned} \therefore \text{Volume} &= (\pi r^2 h) \\ &= \left( \frac{22}{7} \times 7 \times 7 \times 7 \right) \text{cm}^3 = 1078 \text{cm}^3 \end{aligned}$$

$\therefore$  the volume of the cylinder =  $1078 \text{cm}^3$ .

\*\*\*\*\* END \*\*\*\*\*