



Exercise 13C

Question 6:

Here, radius, $r = 35$ cm and slant height, $\ell = 37$ cm

$$\begin{aligned} \therefore h &= \sqrt{\ell^2 - r^2} \\ &= \sqrt{(37)^2 - (35)^2} \\ &= \sqrt{1369 - 1225} = \sqrt{144} = 12 \text{ cm} \\ \therefore \text{height}(h) &= 12 \text{ cm} \\ \therefore \text{Volume of the cone} &= \frac{1}{3} \pi r^2 h \\ &= \left(\frac{1}{3} \times \frac{22}{7} \times 35 \times 35 \times 12 \right) \text{ cm}^3 \\ &= 15400 \text{ cm}^3 \\ \therefore \text{Volume of the cone} &= 15400 \text{ cm}^3 \end{aligned}$$

Question 7:

Here, curved surface area = 4070 cm^2

$$\text{Diameter} = 70 \text{ cm} \Rightarrow \text{radius} = \left(\frac{70}{2} \right) \text{ cm} = 35 \text{ cm}$$

$$\therefore \text{Curved surface area} = \pi r \ell$$

$$\Rightarrow 4070 = \frac{22}{7} \times 35 \times \ell$$

$$\Rightarrow \ell = \left(\frac{4070}{110} \right) \text{ cm} = 37 \text{ cm}$$

$$\therefore \text{slant height} = 37 \text{ cm.}$$

Question 8:

Here, radius = 7 m and height(h) = 24 m

$$\begin{aligned} \therefore \text{slant height}(\ell) &= \sqrt{h^2 + r^2} \\ &= \sqrt{(24)^2 + (7)^2} \\ \ell &= \sqrt{576 + 49} = \sqrt{625} = 25 \text{ m} \end{aligned}$$

Now, area of cloth = $\pi r \ell$

$$= \left(\frac{22}{7} \times 7 \times 25 \right) \text{ m}^2 = 550 \text{ m}^2$$

$$\begin{aligned} \therefore \text{length of cloth} &= \frac{\text{area of cloth}}{\text{width of cloth}} = \left(\frac{550}{2.5} \right) \text{ m} \\ &= 220 \text{ m} \end{aligned}$$

\therefore Length of cloth required to make a conical tent = 220 m

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