



Exercise 13C

Question 9:

Here, height of cone = 3.6 cm and radius = 1.6 cm

After melting, its radius = 1.2 cm

Volume of original cone = Volume of cone after melting

$$\therefore \frac{1}{3}\pi \times 1.6 \times 1.6 \times 3.6 = \frac{1}{3}\pi \times 1.2 \times 1.2 \times h$$

$$\Rightarrow h = \frac{\frac{1}{3}\pi \times 1.6 \times 1.6 \times 3.6}{\frac{1}{3}\pi \times 1.2 \times 1.2} = 6.4 \text{ cm}$$

\therefore height of new cone = 6.4 cm

Question 10:

Let their heights be h and $3h$

And, their radii be $3r$ and r .

$$\text{Then, } V_1 = \frac{1}{3}\pi(3r)^2 \times h$$

$$\text{and, } V_2 = \frac{1}{3}\pi r^2 \times 3h$$

$$\Rightarrow \frac{V_1}{V_2} = \frac{\frac{1}{3}\pi(3r)^2 \times h}{\frac{1}{3}\pi r^2 \times 3h} = \frac{3}{1}$$

$$\therefore V_1 : V_2 = 3 : 1$$

Question 11:

Radius of the cylinder, $R = \left(\frac{105}{2}\right)$ m and its height, $H = 3$ m

Slant height (ℓ) = 53 m

$$\therefore \text{area of canvas} = (2\pi RH + \pi R\ell)$$

$$= \left[\left(2 \times \frac{22}{7} \times \frac{105}{2} \times 3 \right) + \left(\frac{22}{7} \times \frac{105}{2} \times 53 \right) \right] \text{ m}^2$$

$$= (990 + 8745) \text{ m}^2$$

$$= 9735 \text{ m}^2$$

$$\therefore \text{length of canvas} = \left(\frac{\text{area of canvas}}{\text{width of canvas}} \right) \text{ m}$$

$$= \left(\frac{9735}{5} \right) = 1947 \text{ m.}$$

***** END *****