



Exercise 13C

Question 17:

Here, height(h) = 10 cm and radius = 6 cm

$$\begin{aligned}
 \therefore \text{Volume of the remaining solid} &= (\pi r^2 h) - \left(\frac{1}{3} \pi r^2 h\right) \\
 &= (\pi \times 6 \times 6 \times 10) \text{ cm}^3 - \left(\frac{1}{3} \pi \times 6 \times 6 \times 10\right) \text{ cm}^3 \\
 &= \frac{2}{3} \pi \times 6 \times 6 \times 10 \text{ cm}^3 \\
 &= \left(\frac{2}{3} \times 3.14 \times 360\right) \text{ cm}^3 = 753.6 \text{ cm}^3 \\
 \therefore \text{Volume of the remaining solid} &= 753.6 \text{ cm}^3
 \end{aligned}$$

Question 18:

Diameter of the pipe = 5mm = 0.5cm

Radius of the pipe = $\frac{0.5}{2} = 0.25\text{cm}$

Length of the pipe = 10 metres = 1000 cm

Volume that flows in 1 min = $\left[\pi \times (0.25)^2 \times 1000\right] \text{ cm}^3$

\therefore Volume of the conical vessel = $\left[\frac{1}{3} \pi \times (20)^2 \times 24\right] \text{ cm}^3$

$$\begin{aligned}
 \therefore \text{Required time} &= \left[\frac{\frac{1}{3} \pi \times (20)^2 \times 24}{\pi \times (0.25)^2 \times 1000} \right] \text{ min} \\
 &= \left[\frac{\frac{1}{3} \pi \times 400 \times 24}{\pi \times 0.0625 \times 1000} \right] \text{ min} \\
 &= 51.2 \text{ min} \\
 &= 51 \text{ min } 12 \text{ sec}
 \end{aligned}$$

***** END *****