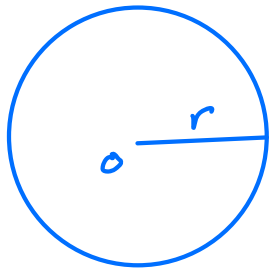


Circle

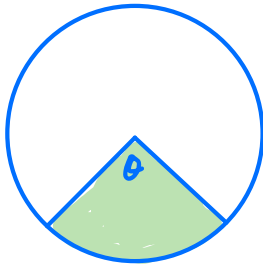


$$\text{Area} = \pi r^2$$

$$\text{Circumference} = 2\pi r$$

Must be remembered

Sector

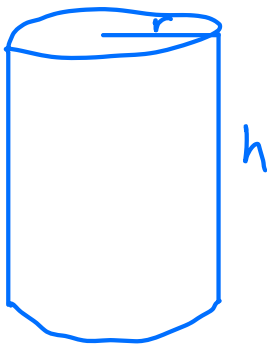


Area of Sector

$$= \frac{\theta}{360} \times \pi r^2$$

$$\text{Perimeter of sector} = \frac{\theta}{360} \times 2\pi r + r + r$$

Cylinder



Volume of cylinder

$$= \pi r^2 h$$

Surface area of solid cylinder

$$= \text{curved surface area} + 2 \text{ ends}$$

$$= 2\pi r h + 2\pi r^2$$

Cone (Given)



By Pythagoras

$$l^2 = r^2 + h^2$$

$$\text{Volume of Cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Curved Surface area} = \pi r l$$

Sphere (Given)

$$\text{Volume} = \frac{4}{3}\pi r^3$$



$$\text{Surface area} = 4\pi r^2$$

Exercise Find areas and perimeters of following sectors

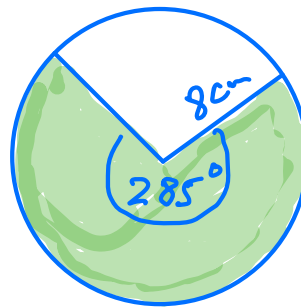
1)



$$\begin{aligned}\text{Area} &= \frac{111}{360} \times \pi \times 6^2 \\ &= 34.9 \text{ cm}^2\end{aligned}$$

Perimeter

$$\begin{aligned}&= \frac{111}{360} \times 2 \times \pi \times 6 + 6 + 6 \\ &= 23.6 \text{ cm}\end{aligned}$$



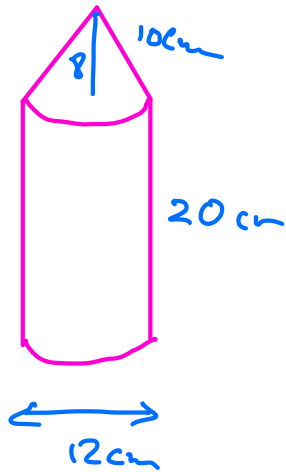
$$\begin{aligned}\text{Area} &= \frac{285}{360} \times \pi \times 8^2 \\ &= 159 \text{ cm}^2\end{aligned}$$

Perimeter

$$\begin{aligned}&= \frac{285}{360} \times 2 \times \pi \times 8 + 8 + 8 \\ &= 55.8 \text{ cm}\end{aligned}$$

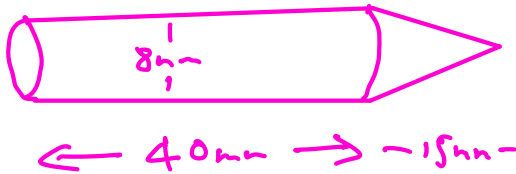
Exercise 4G Page 77

Q5) a)

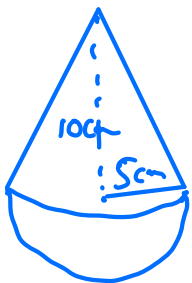


$$\begin{aligned}
 \text{Vol} &= \text{cylinder} + \text{cone} \\
 &= \pi r^2 h_{\text{cyl}} + \frac{1}{3} \pi r^2 h_{\text{cone}} \\
 &= \pi \times 6^2 \times 20 + \frac{1}{3} \pi \times 6^2 \times 8 \\
 &= 720\pi + 96\pi \\
 &= 816\pi \text{ cm}^3
 \end{aligned}$$

b)



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



Find volume of cone attached to hemisphere

$$\begin{aligned}
 &\text{Cone} + \text{hemisphere} \\
 &\frac{1}{3} \pi r^2 h + \frac{2}{3} \pi r^3 \\
 &= \frac{1}{3} \pi \times 5^2 \times 10 + \frac{2}{3} \pi \times 5^3 \\
 &= \frac{500\pi}{3} = 524 \text{ cm}^3
 \end{aligned}$$