



Question 62:

$$\text{Area of the sector of circle} = \frac{\pi r^2 \theta}{360} = 69.3$$

$$\text{Radius} = 10.5 \text{ cm}$$

$$\Rightarrow \frac{\pi \times (10.5)^2 \times \theta}{360} = 69.3$$

$$\Rightarrow \theta = \frac{69.3 \times 360 \times 7}{10.5 \times 10.5 \times 22} = 72^\circ$$

Question 63:

Length of the pendulum = radius of sector = r cm

$$\text{Arc length} = 8.8 \Rightarrow 2 \times \frac{22}{7} \times r \times \frac{30}{360} = 8.8$$

$$\Rightarrow r = \frac{8.8 \times 7 \times 360}{2 \times 22 \times 30} = 16.8 \text{ cm}$$

Question 64:

$$\text{Length of arc} = \frac{2\pi r \theta}{360} = 16.5 \text{ cm}$$

$$2 \times \frac{22}{7} \times r \times \frac{54^\circ}{360^\circ} = 16.5$$

$$r = \frac{16.5 \times 7 \times 360}{2 \times 22 \times 54} = 17.5 \text{ cm}$$

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

$$\left(2 \times \frac{22}{7} \times 17.5 \right) = 110 \text{ cm}$$

$$\begin{aligned} \text{Area of circle} &= \pi r^2 = \left(\frac{22}{7} \times 17.5 \times 17.5 \right) \text{ cm}^2 \\ &= 962.5 \text{ cm}^2 \end{aligned}$$

Question 65:

Circumference of circle = $2\pi r$

$$2\pi r = 88 \Rightarrow r = \frac{88 \times 7}{2 \times 22} = 14 \text{ cm}$$

$$\begin{aligned} \text{Area of sector} &= \frac{\pi r^2 \theta}{360} \\ &= \left(\frac{22}{7} \times 14 \times 14 \times \frac{72}{360} \right) \text{cm}^2 = 123.2 \text{cm}^2 \end{aligned}$$

Question 66:

Angle described by the minute hand in 60 minutes $\theta = 360^\circ$

Angle described by minute hand in 20 minutes

$$= \left(\frac{360}{60} \times 20 \right) = 120^\circ$$

Required area swept by the minute hand in 20 minutes

= Area of the sector (with $r = 15 \text{ cm}$ and $\theta = 120^\circ$)

$$\begin{aligned} &= \left(\frac{\pi r^2 \theta}{360^\circ} \right) \text{cm}^2 = \left(3.14 \times 15 \times 15 \times \frac{120^\circ}{360^\circ} \right) \\ &= 235.5 \text{cm}^2 \end{aligned}$$

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