Exercise 18

Question 1:

$$\text{Radius} = \frac{\text{Diameter}}{2} = \frac{35}{2}\text{cm}$$

$$\text{Circumference of circle} = 2\pi r = \left(2 \times \frac{22}{7} \times \frac{35}{2}\right)\text{cm} = 110\text{ cm}$$

$$\therefore \text{Area of circle} = \pi r^2 = \left(\frac{22}{7} \times \frac{35}{2} \times \frac{35}{2}\right)\text{cm}^2$$

$$= 962.5\text{ cm}^2$$

Question 2:

Circumference of circle = $2\pi r = 39.6$ cm

$$\Rightarrow 2 \times \frac{22}{7} \times r = 39.6$$

$$r = \left(39.6 \times \frac{7}{44}\right)\text{cm} = 6.3$$

$$r = 6.3\text{ cm}$$

$$\text{Area of circle} = \pi r^2 = \left(\frac{22}{7} \times 6.3 \times 6.3\right)\text{cm}^2$$

$$= 124.74\text{ cm}^2$$

Question 3:

$$\text{Area of circle} = \pi r^2 = 301.84$$

$$\Rightarrow r^2 = 301.84 \times \frac{7}{22} = 96.04$$

$$r = \sqrt{96.04}\text{ cm} = 9.8\text{ cm}$$

$$\text{Circumference of circle} = 2\pi r = 2 \times \frac{22}{7} \times 9.8 = 61.6\text{ cm}$$

Question 4:

Let radius of circle be r

Then, diameter = 2 r

circumference - Diameter = 16.8

$$\Rightarrow 2\pi r - 2r = 16.8$$

$$\Rightarrow \frac{44}{7}r - 2r = 16.8$$

$$\Rightarrow \frac{30r}{7} = 16.8 \Rightarrow r = \frac{16.8 \times 7}{30} = 3.92 \text{ cm}$$

Circumference of circle = $2\pi r = \left(2 \times \frac{22}{7} \times 3.92\right) \text{cm} = 24.64 \text{ cm}$

Question 5:
Let the radius of circle be r cm
Then, circumference - radius = 37 cm

$$2\pi r - r = 37$$

$$\frac{44r}{7} - r = 37$$

$$\frac{37r}{7} = 37 \Rightarrow r = \frac{37 \times 7}{37} = 7 \text{ cm}$$

$$\text{Area of circle} = \pi r^2 = \frac{22}{7} \times 7 \times 7 = 154 \text{ cm}^2$$

********** END **********