Question 6:

Area of square = $(\text{side})^2 = 484\ \text{cm}^2$

$\Rightarrow$ side = $\sqrt{484}$ cm = 22 cm

Perimeter of square = 4 × side = 4 × 22 = 88 cm

Circumference of circle = Perimeter of square

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

$$\text{Area of circle} = \pi r^2 = \left(\frac{22}{7} \times 14 \times 14\right)\text{cm}^2 = 616\,\text{cm}^2$$

Question 7:

$$\text{Area of equilateral} = \frac{\sqrt{3}a^2}{4} = 121\sqrt{3}$$

$$a^2 = 121 \times \frac{\sqrt{3}}{\sqrt{3}} \times 4$$

$$a^2 = 484 \Rightarrow a = \sqrt{484}$$

$$a = 22\ \text{cm}$$

Perimeter of equilateral triangle = 3a = (3 × 22) cm

= 66 cm

Circumference of circle = Perimeter of circle

$$2\pi r = 66 \Rightarrow r = 66 \times \frac{7}{22 \times 2} = 10.5\text{cm}$$

$$\text{Area of circle} = \pi r^2 = \left(\frac{22}{7} \times 10.5 \times 10.5\right)\text{cm}^2$$

$$= 346.5\ \text{cm}^2$$

Question 8:

Let the radius of park be r meter

Thus, $\pi r + 2r = 90 \Rightarrow \frac{22r}{7} + 2r = 90$

$\Rightarrow \frac{36r}{7} = 90 \Rightarrow r = \frac{90 \times 7}{36}$

$r = 17.5$ cm

Area of semicircle $= \frac{1}{2}\pi r^2 = \left(\frac{1}{2} \times \frac{22}{7} \times 17.5 \times 17.5\right) m^2$

$= 481.25\ m^2$

Question 9:

Let the radii of circles be x cm and (7 - x) cm

Then,

$2\pi x - [2\pi(7 - x)] = 8$

$2\pi x - [14\pi - 2\pi x] = 8$

$2\pi x - 14\pi + 2\pi x = 8$

$4\pi x - 14\pi = 8$

$2\pi x = 4 + 7\pi$

$2\pi x = 4 + 22$

$2\pi x = 26$

Substitute the value of $2\pi x$ in $2\pi(7 - x)$

$= 14\pi - 2\pi x = 14 \times \frac{22}{7} - 26$

$= 44 - 26 = 18$ cm

Circumference of the circles are 26 cm and 18 cm

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