



#### Areas Related to Circles Ex 15.2 Q4

**Answer :**

We know that the arc length  $l$  of a sector of an angle  $\theta$  in a circle of radius  $r$  is

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

It is given that  $l = 15 \text{ cm}$  and angle  $\theta = 45^\circ$ .

Now we substitute the value of  $l$  and  $\theta$  in above formula to find the value of radius  $r$  of circle.

$$\begin{aligned} 15 \text{ cm} &= \frac{45^\circ}{360^\circ} \times 2\pi r \\ r &= \frac{15 \times 360^\circ}{2\pi \times 45^\circ} \text{ cm} \\ r &= \boxed{\frac{60}{\pi} \text{ cm}} \end{aligned}$$

#### Areas Related to Circles Ex 15.2 Q5

**Answer :**

We know that the arc length  $l$  of a sector of an angle  $\theta$  in a circle of radius  $r$  is

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

It is given  $l = \frac{a\pi}{4} \text{ cm}$  and radius  $r = a \text{ cm}$ .

Now we substitute the value of  $l$  and  $r$  in above formula to find the value of angle  $\theta$  subtended at the centre of circle.

$$\begin{aligned} \frac{a\pi}{4} \text{ cm} &= \frac{\theta}{360^\circ} \times 2\pi \times a \\ \theta &= \frac{a\pi \times 360^\circ}{2\pi a \times 4} \\ \theta &= \boxed{45^\circ} \end{aligned}$$

#### Areas Related to Circles Ex 15.2 Q6

**Answer :**

We know that the area  $A$  of a sector of an angle  $\theta$  in the circle of radius  $r$  is given by

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

It is given that  $r = 4 \text{ cm}$  and angle  $\theta = 30^\circ$ .

Now we substitute the value of  $r$  and  $\theta$  in above formula,

$$\begin{aligned} A &= \frac{30^\circ}{360^\circ} \times \pi \times 4 \times 4 \text{ cm}^2 \\ &= \boxed{\frac{4\pi}{3} \text{ cm}^2} \end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*