



Areas Related to Circles Ex 15.2 Q4

Answer :

We know that the arc length l of a sector of an angle θ 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 θ 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 θ 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 θ 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 θ 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 θ in above formula,

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

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