

Arc Length & Sector in Radians (A)



$$\text{Arc length} = r\theta$$

$$\text{Area of sector} = \frac{1}{2}r^2\theta$$

A sector of a circle has radius 9 cm and central angle 1.6 radians. Find the area of the sector.

$$\begin{aligned}\text{Area} &= \frac{1}{2}(9)^2(1.6) \\ &= \frac{1}{2} \times 81 \times 1.6 \\ &= 64.8 \text{ cm}^2\end{aligned}$$

A sector of a circle has radius 10 cm and central angle 2.1 radians. Find the arc length.

$$\begin{aligned}\text{Arc length} &= 10 \times 2.1 \\ &= 21 \text{ cm}\end{aligned}$$