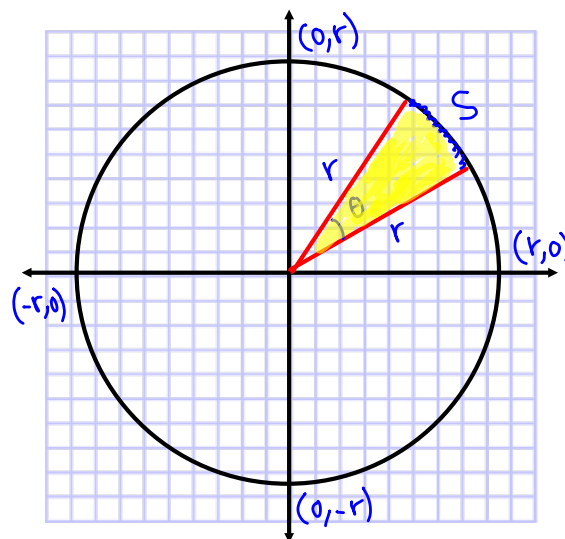


Circular Sector

Arc Length & Area



Arc length

$$S = r\theta$$

θ in radians

Area of this
Circular Sector

$$A = \frac{1}{2}r^2\theta$$

Find the arc length of a Circular sector with radius 5cm and central angle of 45°

$$S = r\theta \quad \theta \text{ in radians} \quad 45^\circ = \frac{\pi}{4} \text{ Radian}$$

$$S = 5 \cdot \frac{\pi}{4}$$

$$S = 1.25\pi \text{ cm}$$

Find the area of a circular sector with radius 6 in. and central angle of $\frac{5\pi}{12}$ Radians.

$$A = \frac{1}{2} r^2 \theta \quad \theta \text{ in Radians.}$$

$$A = \frac{1}{2} \cdot 6^2 \cdot \frac{5\pi}{12}$$

$$A = \frac{1}{2} \cdot \frac{36}{1} \cdot \frac{5\pi}{12} = \frac{15\pi}{2} \text{ in}^2$$

$$A = 7.5\pi \text{ in}^2$$