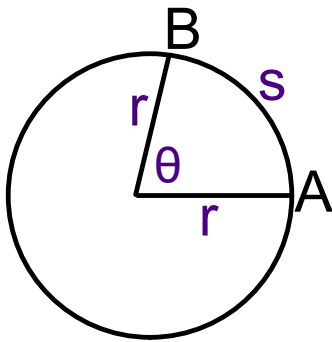


## Arc Length

$$s = r\theta$$



Where:

- $\theta$  = (theta) measure of central angle in radians
- $r$  = radius
- $s$  = length of subtended arc

### Example:

Find the arc length given  $r=2\text{cm}$  and  $\theta = \pi/3$

$$s = 2 \times \pi/3$$

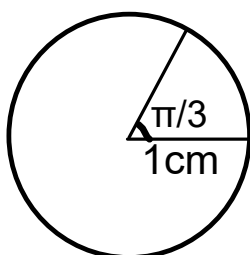
$$= \frac{2\pi}{3} \text{ cm or } 2.09\text{cm}$$

### Special Case:

In a circle with a radius of 1 unit, the length of an arc is equal to the central angle which subtends this arc.

$$r = 1 \rightarrow s = \theta$$

Example:  $r = 1\text{cm}$  and  $\theta = \pi/3$



$$s = 1 \times \pi/3$$

$$= \pi/3 \text{ cm or } \approx 1.05\text{cm}$$