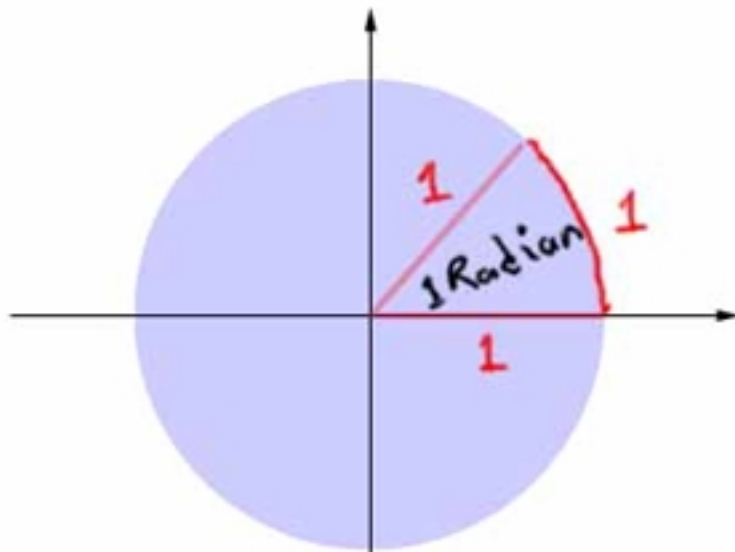


Another method for measuring angles is using radian measure. Let's start with a "unit circle" (a circle with radius on 1).

The circumference of a circle with radius of 1 is:

$$C = 2\pi r.$$



When the radius is 1, the Circumference (distance around the circle) is $2\pi(1)$ or 2π . (Half the circle $180^\circ = \pi$ radians.)

When the distance around the circle (arc length) is 1, the measure of the central angle is 1 radian (approximately 57°).

To convert from degrees to radians multiply by $\pi/180$

To convert radians to degrees multiply by $180/\pi$

Ex 1) Convert 60° to radians.

$$\begin{aligned}60^\circ &= 60^\circ \cdot \frac{\pi}{180} \\ &= \frac{60\pi}{180} \\ &= \left(\frac{\pi}{3}\right)\end{aligned}$$

Ex 2) Convert $3\pi/4$ to degrees.

$$\begin{aligned}\frac{3\pi}{4} &= \frac{3\pi}{4} \cdot \frac{180}{\pi} \\ &= \frac{\cancel{3\pi}}{\cancel{4}} \cdot \frac{180}{\cancel{\pi}} \\ &= \left(135^\circ\right)\end{aligned}$$