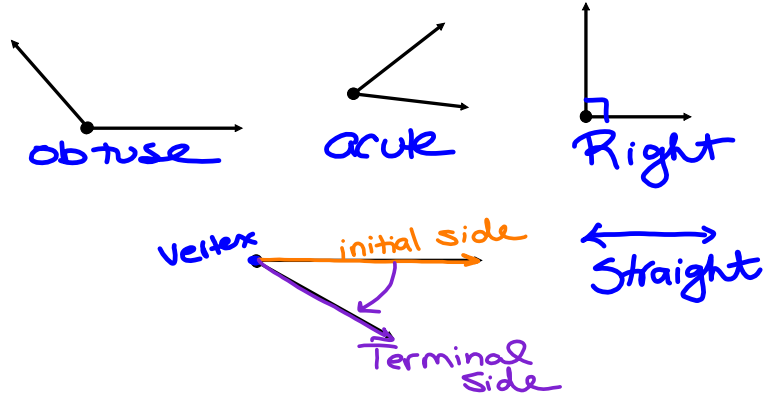
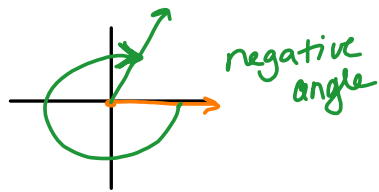
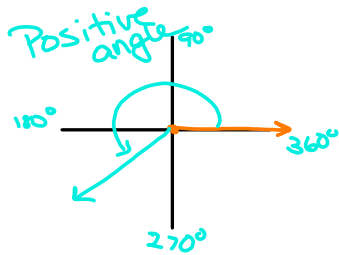
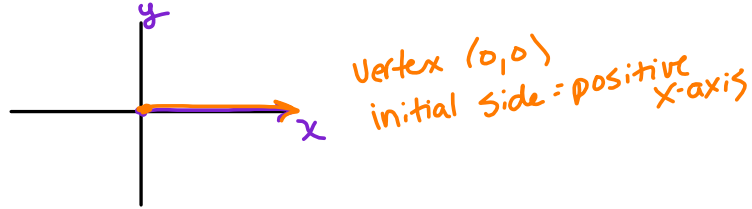


# Measuring Angles



Standard Position

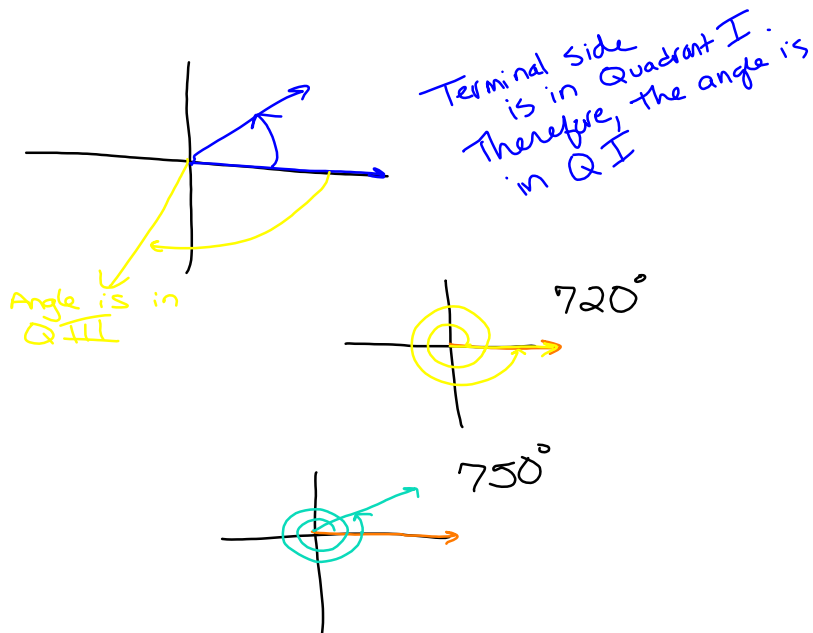


$\alpha$  alpha

$\beta$  Beta

~~$\theta$  theta~~

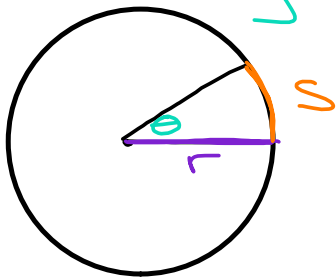
$\gamma$  Gamma



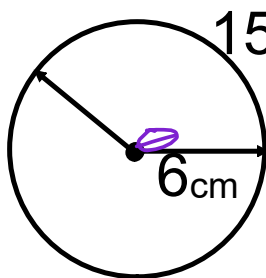
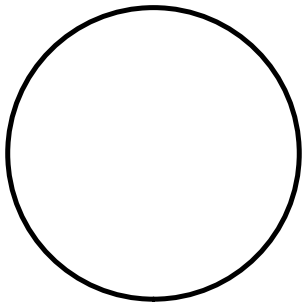
## Radians

Radian Measure (measuring the central angle)

The length of the intercepted arc divided by the radius



$$\theta = \frac{s}{r}$$



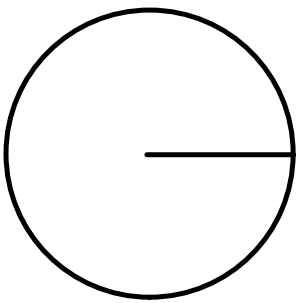
$$\theta = \frac{15}{6} = \frac{5}{2} \text{ radians}$$

$$1 \text{ revolution} = 360^\circ = 2\pi$$

$$\frac{1}{2} \text{ revolution} = 180^\circ = \pi$$

$$\frac{1}{4} \text{ revolution} = 90^\circ = \frac{\pi}{2}$$

## Converting degrees to radians      Multiply by $\frac{\pi}{180}$



$$271^\circ \cdot \frac{\pi}{180} = \frac{271\pi}{180}$$

$$30^\circ \cdot \frac{\pi}{180} = \frac{\pi}{6}$$

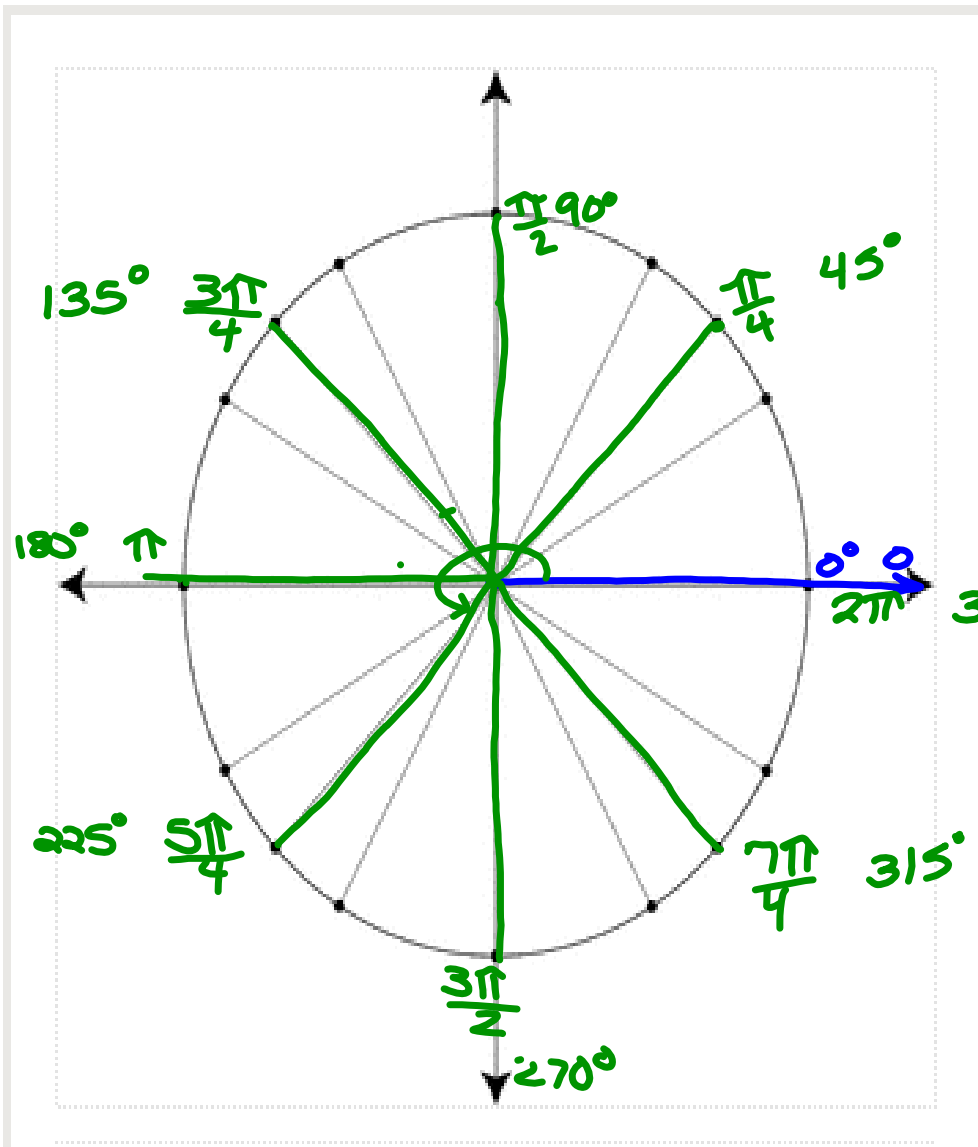
$$90^\circ \cdot \frac{\pi}{180} = \frac{\pi}{2}$$

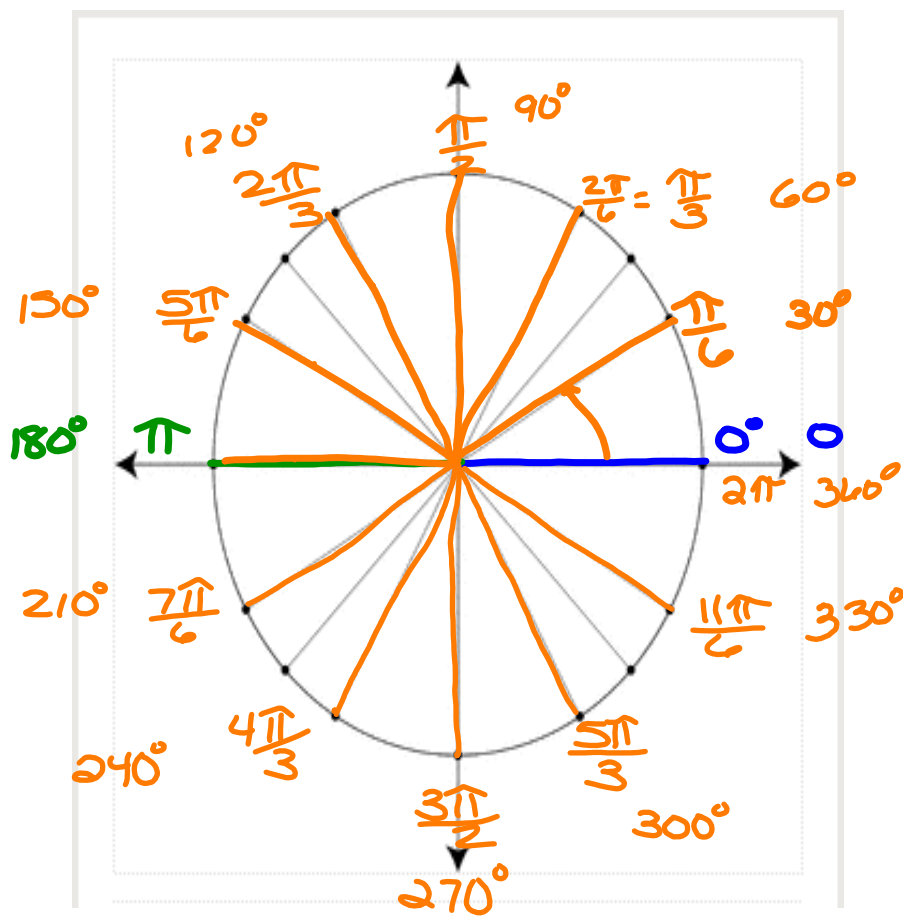
$$60^\circ \cdot \frac{\pi}{180} = \frac{\pi}{3}$$

Radians  $\rightarrow$  degrees      Multiply by  $\frac{180}{\pi}$

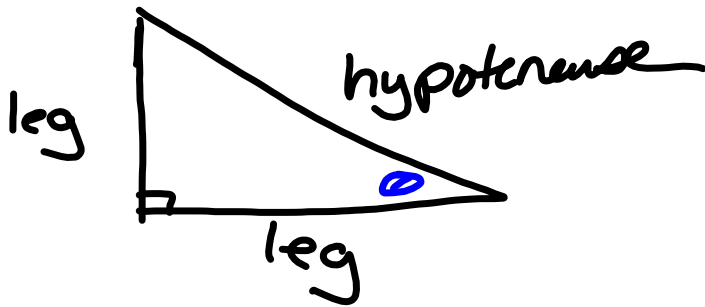
$$\frac{3\pi}{2} \cdot \frac{180}{\pi} = 270^\circ$$

$$\frac{\pi}{4} \cdot \frac{180}{\pi} = 45^\circ$$





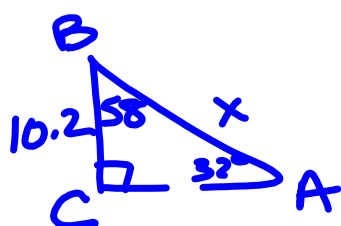
## Trig Review



$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$
$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$
$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

Soh Cah Toa

Pythagorean Thm  
 $a^2 + b^2 = c^2$



$$180 - 90 - 58 = 32^\circ$$

$$\cos 58^\circ = \frac{10.2}{x}$$

$$\frac{x \cancel{\cos 58^\circ}}{\cancel{\cos 58^\circ}} = \frac{10.2}{\cos 58^\circ}$$

$$x = 19.24$$