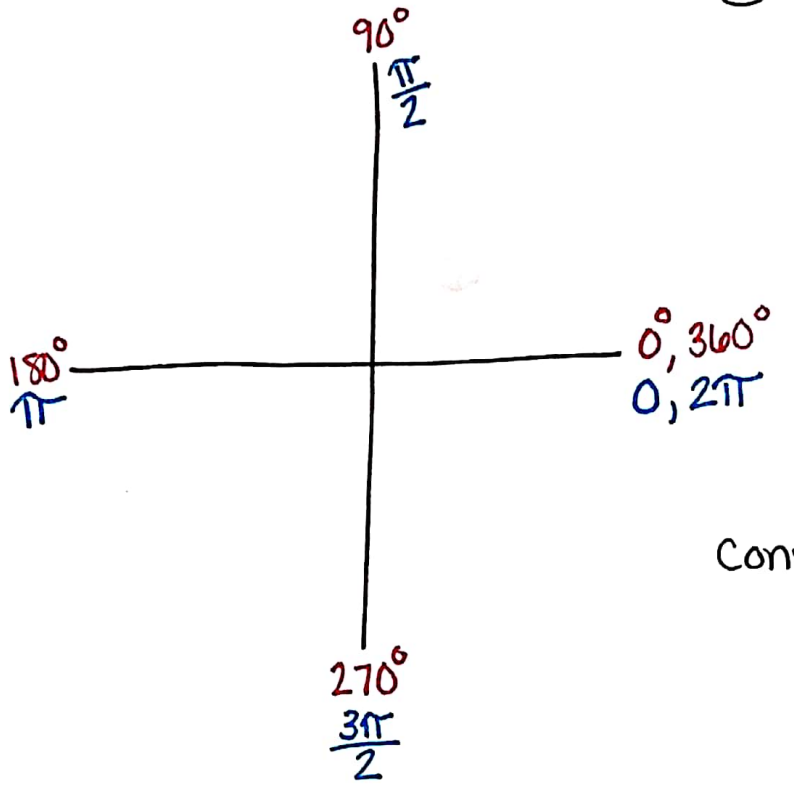
April 24

# Convert Between Degrees and Radians




Full Revolution:
degrees: 360°
radians: 2π

Conversion Factor:
180° = π radians

Convert to radians:

Ex1 $\frac{120^\circ}{1} \cdot \left(\frac{\pi}{180^\circ}\right) = \frac{120\pi}{180} = \boxed{\frac{2\pi}{3}}$

Ex2 $\frac{-1080^\circ}{1} \cdot \left(\frac{\pi}{180^\circ}\right) = \frac{-1080\pi}{180} = \boxed{-6\pi}$

Convert to degrees:

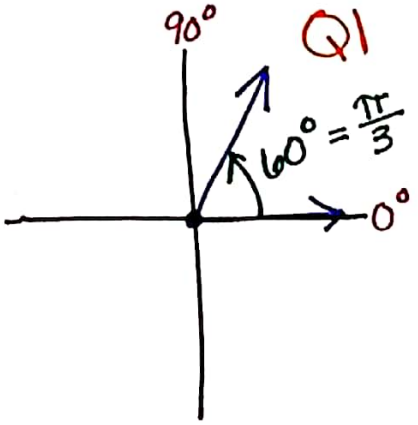
Ex3 $\frac{2\pi}{9} \cdot \left(\frac{180^\circ}{\pi}\right) = \frac{360^\circ}{9} = \boxed{40^\circ}$

Ex4 $-\frac{8\pi}{7} \cdot \left(\frac{180^\circ}{\pi}\right) = \frac{-1440^\circ}{7} = \boxed{-205.71^\circ}$

# Angles in Radians

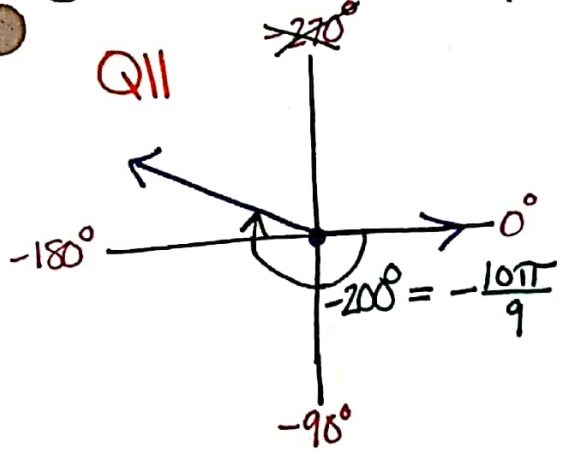
**Ex5** Sketch $\frac{\pi}{3}$

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



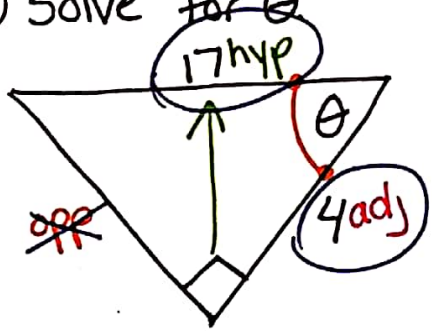

**Ex6** Sketch $-\frac{10\pi}{9}$

$$-\frac{10\pi}{9} \cdot \left(\frac{180^\circ}{\pi}\right) = \frac{-1800^\circ}{9} = -200^\circ$$



# More Right Triangle Trig

**Ex 7** Solve ~~for θ~~



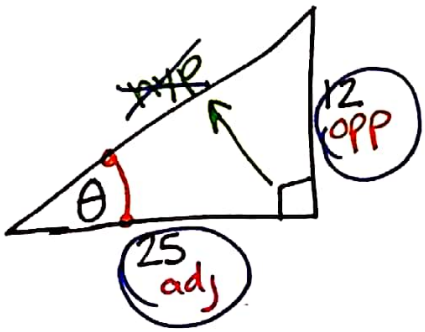

$$\cos\theta = \frac{adj}{hyp}$$

$$\cos^{-1}(\cos\theta) = \cos^{-1}\left(\frac{4}{17}\right)$$

$$\theta = \cos^{-1}\left(\frac{4}{17}\right)$$

$$\boxed{\theta = 76.39^\circ}$$

**Ex 8** Solve for θ.




$$\tan\theta = \frac{opp}{adj}$$

$$\tan^{-1}(\tan\theta) = \tan^{-1}\left(\frac{12}{25}\right)$$

$$\theta = \tan^{-1}\left(\frac{12}{25}\right)$$

$$\boxed{\theta = 25.64^\circ}$$