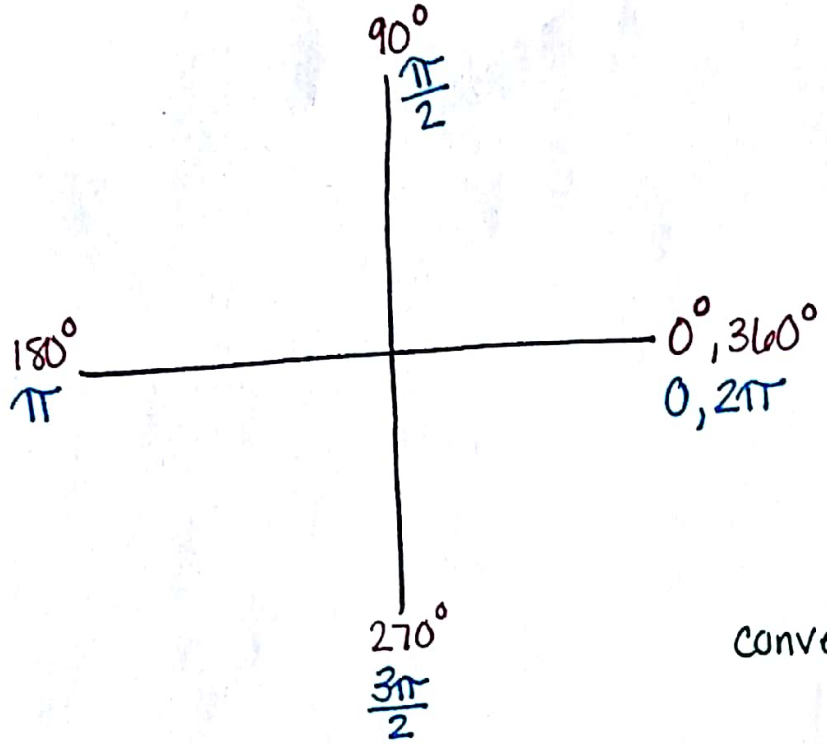
November 28

Relationship Between Degrees and Radians



A circle is 360° or 2π radians.

conversion factor : $180^\circ = \pi$ radians

Convert angles into radians:

Ex1 120°

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

Ex2 -545°

$$-\frac{545}{1} \cdot \left(\frac{\pi}{180}\right) = -\frac{545\pi}{180} = \boxed{-\frac{109\pi}{36}}$$

Convert angles into degrees:

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

Ex4 $-\frac{11\pi}{7}$ $\quad -\frac{11\pi}{7} \cdot \left(\frac{180}{\pi}\right) = -\frac{1980}{7} = \boxed{-282.86^\circ}$

Ex5 9π $\quad \frac{9\pi}{1} \cdot \left(\frac{180}{\pi}\right) = \frac{1620}{1} = \boxed{1620^\circ}$

Sketch Radians Angles

Ex6 Sketch $\frac{25\pi}{9}$ $\quad \frac{25\pi}{9} \cdot \left(\frac{180}{\pi}\right) = \frac{4500}{9} = 500^\circ$