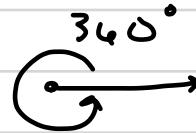
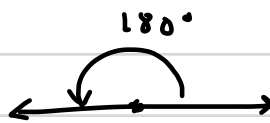
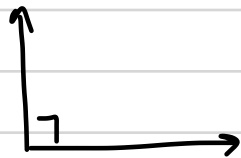
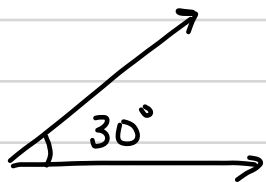
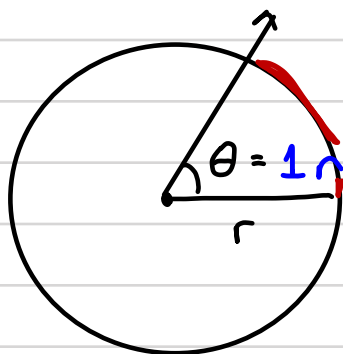


Radians

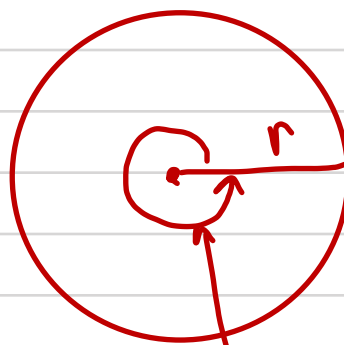
Degrees:



Radians:



r is the arc length for θ .



2π radians

for radians, the angle measure is the number of radii in the arc-length for that angle.

converting Radians \leftrightarrow Degrees

$$2\pi \text{ radians} = 360 \text{ degrees}$$

also

$$\pi \text{ radians} = 180 \text{ degrees}$$

Convert each angle measure

① 30°

$$\frac{2\pi}{x} = \frac{360}{30}$$

$$\frac{2\pi}{x} = 12$$

$$x = \frac{2\pi}{12}$$

$$x = \frac{\pi}{6} \text{ radians}$$

② 45°

$$\frac{2\pi}{x} = \frac{360}{45}$$

$$45(2\pi) = \frac{360x}{360}$$

$$\frac{90\pi}{360} = x$$

$$x = \frac{\pi}{4} \text{ radians}$$

③ $\frac{\pi}{3}$ radians

$$\frac{2\pi}{\pi/3} = \frac{360}{x}$$

$$2\pi\left(\frac{3}{\pi}\right) = \frac{360}{x}$$

$$6 = \frac{360}{x} \rightarrow x = \frac{360}{6}$$

$$x = 60^\circ$$

④ $-\frac{\pi}{2}$ radians

$$\frac{2\pi}{-\pi/2} = \frac{360}{x}$$

$$2\pi\left(\frac{-2}{\pi}\right) = \frac{360}{x}$$

$$-4 = \frac{360}{x}$$

$$x = \frac{360}{-4}$$

$$x = -90^\circ$$