Math Study Strategies

Radians and Degrees

Definitions

Radian: the length of the arc of a sector in a circle.
Degree: the measure of the angle between the initial ray and the terminal ray.

Conversions

To convert degrees to radians, multiply degrees by $\frac{\pi}{180^\circ}$

To convert radians to degrees, multiply radians by $\frac{180^\circ}{\pi}$

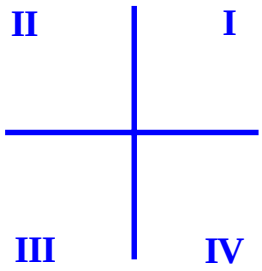
Examples

Convert 45° to radians. $45^\circ \times \frac{\pi}{180^\circ} = \frac{45\pi}{180} = \frac{\pi}{4}$

Convert $\frac{\pi}{6}$ to degrees. $\frac{\pi}{6} \times \frac{180^\circ}{\pi} = \frac{180^\circ}{6} = 30^\circ$

Angles in the Four Quadrants

Quadrant	Associated angle θ (in degrees)	Associated angle θ (in radians)
I	$0 < \theta < 90$	$0 < \theta < \pi/2$
II	$90 < \theta < 180$	$\pi/2 < \theta < \pi$
III	$180 < \theta < 270$	$\pi < \theta < 3\pi/2$
IV	$270 < \theta < 360$	$3\pi/2 < \theta < 2\pi$



Types of Angles

Type of Angle	Angle's measure (in degrees)	Angle's measure (in radians)
Acute	0 - 90	0 - $\pi/2$
Obtuse	90 - 180	$\pi/2$ - π
Right	90	$\pi/2$
Straight	180	π
Complementary	$\alpha + \beta = 90$	$\alpha + \beta = \pi/2$
Supplementary	$\alpha + \beta = 180$	$\alpha + \beta = \pi$