

Unit 1.3 Notes Using the Definitions of the Trigonometric Functions

Reciprocal Identities

Reciprocal Identities		
$\sin \theta = \frac{1}{\csc \theta}$	$\cos \theta = \frac{1}{\sec \theta}$	$\tan \theta = \frac{1}{\cot \theta}$
$\csc \theta = \frac{1}{\sin \theta}$	$\sec \theta = \frac{1}{\cos \theta}$	$\cot \theta = \frac{1}{\tan \theta}$

Quotient Identities

Quotient Identities	
$\tan \theta = \frac{\sin \theta}{\cos \theta}$	$\cot \theta = \frac{\cos \theta}{\sin \theta}$

Pythagorean Identities

Pythagorean Identities		
★	$\sin^2 \theta + \cos^2 \theta = 1$	★
$1 + \tan^2 \theta = \sec^2 \theta$	$1 + \cot^2 \theta = \csc^2 \theta$	

Range of Trigonometric Functions

$$-1 \leq \sin \theta \leq 1$$

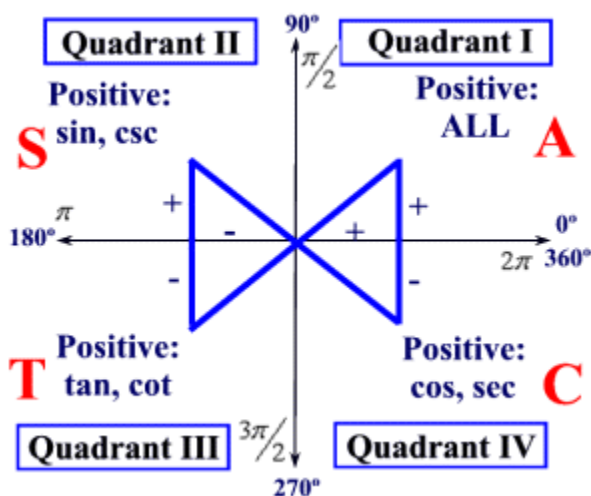
$$-1 \leq \cos \theta \leq 1$$

$$\sec \theta \leq -1 \text{ or } \sec \theta \geq 1$$

$$\csc \theta \leq -1 \text{ or } \csc \theta \geq 1$$

$\tan \theta$ and $\cot \theta$ can equal any number

Signs of Trigonometric Function in each Quadrant



The saying that helps you remember is:

All **S**tudents **T**ake **C**alculus