A Strategy for Evaluating Trigonometric Ratios at Any Angle

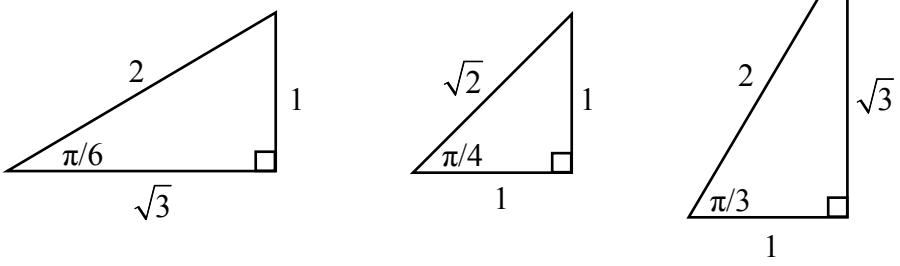
I. Determine where the terminal side of the angle θ lies in the coordinate plane.

II. If the terminal side lies on an axis:
   A. Use the (x, y) coordinates of the Unit Circle to determine the values of $\cos\theta$ and $\sin\theta$.
   B. Use the reciprocal and/or quotient properties to find the values of $\tan\theta$, $\csc\theta$, $\sec\theta$, and $\cot\theta$.

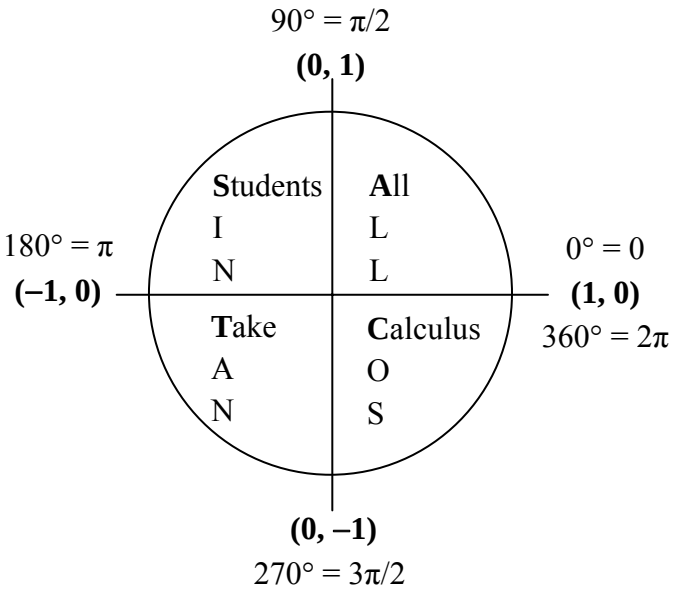
III. If the terminal side lies in a quadrant:
   A. Use "All Students Take Calculus" to determine if the value will be positive or negative.
   B. Determine the reference angle θ' to θ.
   C. Use the Special Right Triangles to determine the ratio of the reference angle.
   D. The sign from Step A and the ratio from Step C is the trigonometric value of θ.

A Few Reminders

The Special Right Triangles



The Unit Circle



The Shortcut Trick

$\theta \rightarrow$	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
	↓	↓	↓	↓	↓
$S \rightarrow \sqrt{}$	0	1	2	3	4
$C \rightarrow \sqrt{}$	4	3	2	1	0
	2				