

Name _____ Banner _____

Fall 2007

Quiz #5

Precalculus

#1) Fill in the blanks in the chart below with the information we've learned regarding the unit circle and how to use it to evaluate the trig functions.

$r=1$		x	y	y/x	x/y	$1/x$	$1/y$
\ominus		$\cos(\theta)$	$\sin(\theta)$	$\tan(\theta)$	$\cot(\theta)$	$\sec(\theta)$	$\csc(\theta)$
0	0°	1	0	0	Undefined		
$\pi/6$	30°	$\sqrt{3}/2$	$1/2$		$\sqrt{3}$		
	45°						
$\pi/3$			$\sqrt{3}/2$				
$\pi/2$							
		$-1/2$					
	135°			-1			
$5\pi/6$							2
							Undefined
		$-\sqrt{3}/2$					-2
$5\pi/4$							
		$-1/2$					
	270°	0		Undefined			
				-1			
	330°	$\sqrt{3}/2$					

#2) Starting with the pythagorean theorem $x^2 + y^2 = r^2$, derive the 3 pythagorean identities:

$$A) \sin^2\theta + \cos^2\theta = 1$$

$$B) \tan^2\theta + 1 = \sec^2\theta$$

$$C) 1 + \cot^2\theta = \csc^2\theta$$

#3 Derive the reciprocal and quotient identities:

$$\text{Example deriving } \sin\theta = \frac{1}{\csc\theta} : \sin\theta = \frac{y}{r} = \frac{1}{r/y} = \frac{1}{\csc\theta}$$

$$A) \tan\theta = \frac{1}{\cot\theta}$$

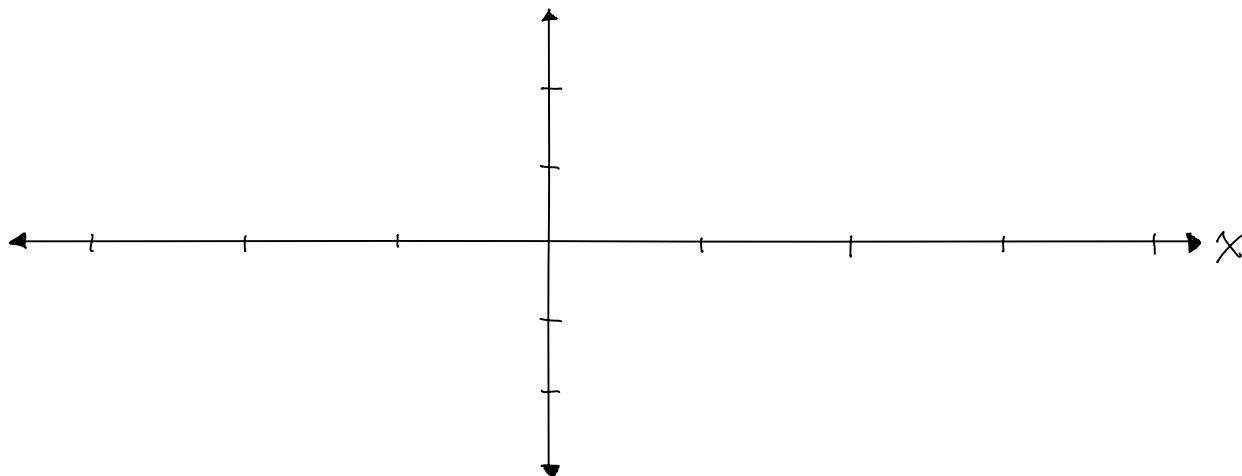
$$B) \cos\theta = \frac{1}{\sec\theta}$$

$$C) \tan\theta = \frac{\sin\theta}{\cos\theta}$$

$$D) \cot\theta = \frac{\cos\theta}{\sin\theta}$$

#4) Graph the following

A) $\sin(x)$



B) $\cos(x)$

