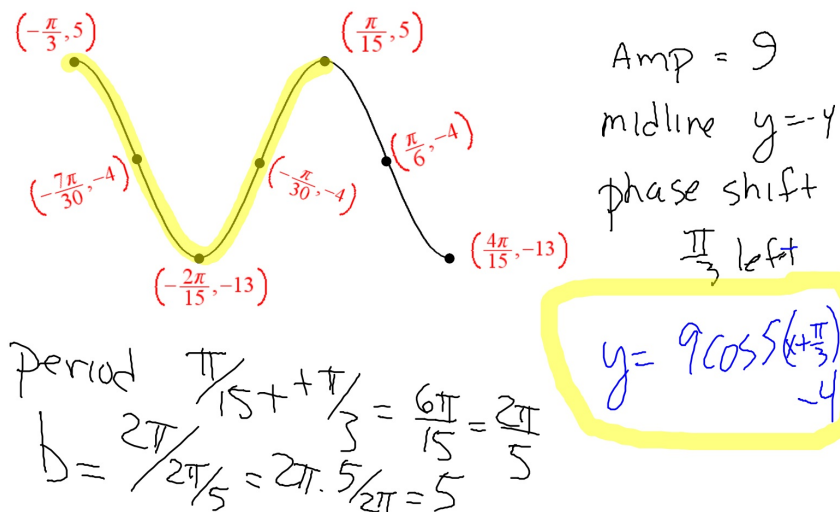


Bellwork Wednesday, April 30, 2014

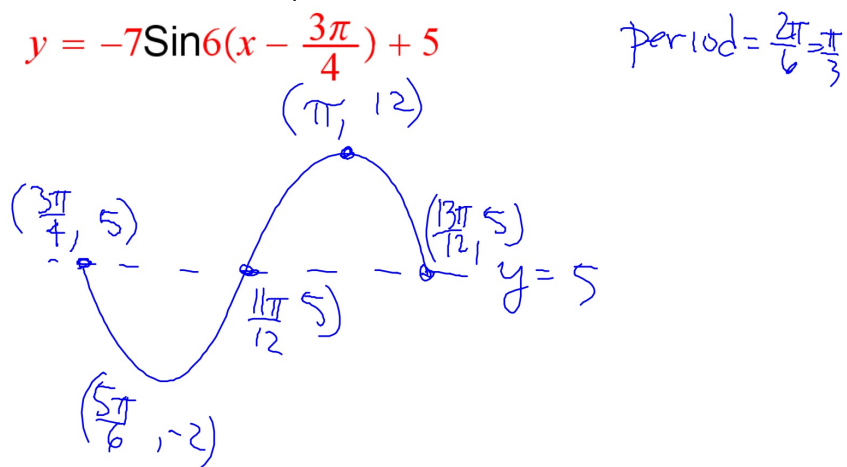
1. Simplify this trigonometric expression to a single trig function or number.

$$\frac{\csc x}{\tan x + \cot x} = \frac{\frac{1}{\sin x}}{\left(\frac{\sin x}{\cos x} + \frac{\cos x}{\sin x}\right)} \cdot \frac{\sin x \cos x}{\sin x \cos x} = \frac{\cos x}{\sin^2 x + \cos^2 x} = \cos x$$

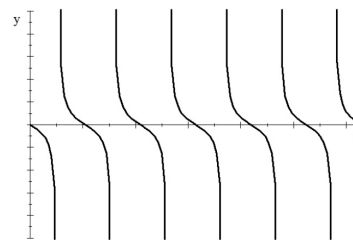
2. Write the equation of this function.



3. Graph one period of this function. Label the coordinates of all max, min, and x-intercepts.



4. Write the equation of this tangent function. The window is 0 to 2π



Period: $\frac{2\pi}{6} = \frac{\pi}{3}$

$b = \frac{\pi}{\pi/3} = 3$

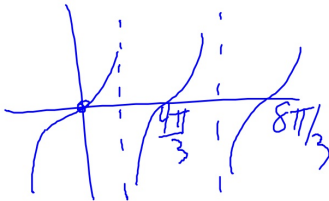
Equation: $y = -\tan 3x$

5. State the Period and give 4 Zeros and 4 Vertical Asymptotes for this function:

$$y = \tan \frac{3x}{4}$$

period = $\frac{\pi}{b}$
 $\frac{\pi}{3/4} = \frac{4\pi}{3}$

Period = $\frac{4\pi}{3}$



Zeros: $0, \pm \frac{4\pi}{3}, \pm \frac{8\pi}{3}$

VA: $x = \pm \frac{4\pi}{3}, \pm 2\pi$

6. Given $\csc \theta = \frac{85}{77}$ find the other five trigonometric ratios.



$$85^2 = x^2 + 77^2$$

$$\sin \theta = \frac{77}{85} \quad \cos \theta = \frac{36}{85} \quad \tan \theta = \frac{77}{36}$$

$$\sec \theta = \frac{85}{36} \quad \cot \theta = \frac{36}{77}$$

7. Find both a positive and a negative coterminal angle for each angle. Give your answer in the same form as the given angle.

a) $\theta = 1340^\circ$

b) $\theta = -\frac{26\pi}{7} + 2\pi = -\frac{26\pi}{7} + \frac{14\pi}{7}$

Pos: $1700, 980, 220$

Pos: $\frac{2\pi}{7}$

Neg: -100°

Neg: $-\frac{12\pi}{7}, -\frac{40\pi}{7}$

$-\frac{26\pi}{7}, \frac{180^\circ}{11}$