Bellwork Alg 2B Thursday, May 31, 2018

1. Confirm this identity. $\text{Tan}^2x + \text{Tan}x\text{Sec}x = \dfrac{1 + \text{Sin}x}{\text{Cos}^2x} - 1$

2. Find the area of $\triangle ABC$ where $\angle C = 115°$, $a = 30$, $b = 23$. Round to the nearest hundredth.

3. Graph one period of the following function. Label coordinates of all relative Max's and Min's and label the VA with their equations. $y = -2\text{Csc}\left(5\left(x - \frac{\pi}{2}\right)\right) - 6$

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ALG 2B BELLWORK Thur 5-31-18

ANSWERS

(1) $\tan^2 x + \tan x \sec x = \dfrac{1+\sin x}{\cos^2 x} - 1$

$\dfrac{\sin^2}{\cos^2} + \dfrac{\sin}{\cos} \cdot \dfrac{1}{\cos}$

$\dfrac{\sin^2}{\cos^2} + \dfrac{\sin}{\cos^2}$

$\dfrac{\sin^2 + \sin}{\cos^2}$

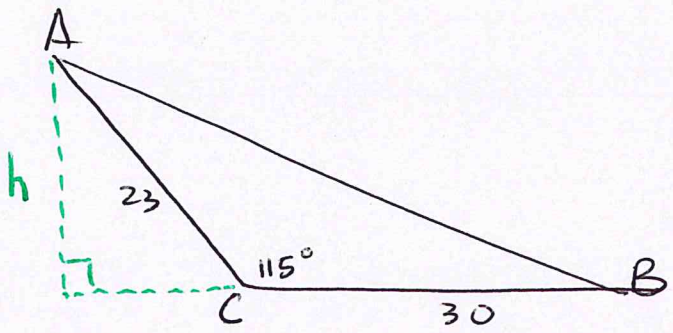
$\dfrac{1+\sin x}{\cos^2} - \dfrac{\cos^2}{\cos^2}$

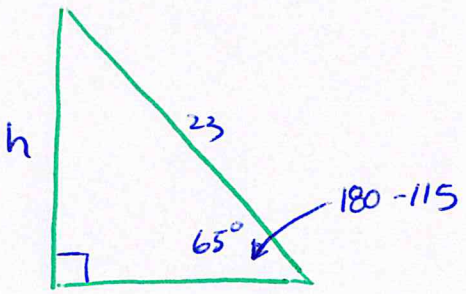
$\dfrac{1+\sin - \cos^2}{\cos^2}$

$\dfrac{1+\sin - (1-\sin^2)}{\cos^2}$

$$\frac{\sin^2+\sin}{\cos^2} = \frac{\sin+\sin^2}{\cos^2}$$

(2)





$\sin 65^\circ = \dfrac{h}{23}$

$h = 20.85$

$A = \frac{1}{2} bh$

$A = \frac{1}{2}(30)(20.85)$

$A = 312.75$

(3) $y = -2\csc(5(x - \pi/2)) - 6$

$y = -2\sin(5(x - \pi/2)) - 6$

Amplitude = 2

period = $2\pi/5$

phase shift: $\pi/2$ RIGHT

midline: $y = -6$

upside down

$1/4^{th}$ of a period = $\frac{1}{4} \cdot \frac{2\pi}{5} = \frac{\pi}{10}$