Bellwork Alg 2B Thursday, May 10, 2018

1. Given $\text{Cot}\theta = \frac{1}{7}$ find the other five trigonometric ratios. Rationalize denominators and simplify.

$\text{Sin}\theta =$ $\text{Cos}\theta =$ $\text{Tan}\theta =$ $\text{Sec}\theta =$ $\text{Csc}\theta =$

2. State the location of five x-intercepts and five Vertical Asymptotes of this function: $\text{Tan}\frac{6x}{7}$

x-int: VA:

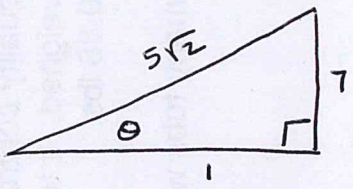
3. Sketch the graph one period of the function below. Label the coordinates of all points on the midline, all max's, and all min's.

$y = -4\text{Sin}(3(x + \frac{\pi}{6})) - 1$

ALG 2B Bellwork Thur. 5-10-18

Answers

① Given: $\cot\theta = \frac{1}{7}$



HYPOTENUSE $= \sqrt{7^2 + 1^2} = \sqrt{50} = 5\sqrt{2}$

$\tan\theta = \frac{7}{1}$

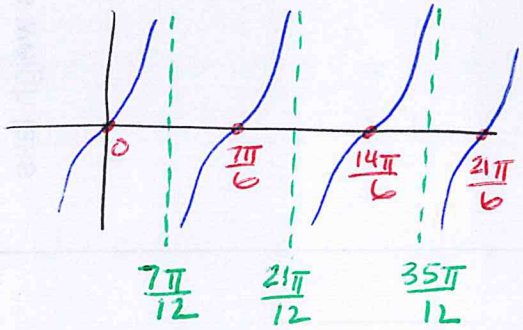
$\sin\theta = \frac{7}{5\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{7\sqrt{2}}{10}$

$\cos\theta = \frac{1}{5\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{10}$

$\csc\theta = \frac{5\sqrt{2}}{7}$

$\sec\theta = 5\sqrt{2}$

② $y = \tan\frac{6x}{7}$ period $= \frac{\pi}{\frac{6}{7}} = \frac{7\pi}{6} \downarrow \frac{14\pi}{12}$



X-INT: $0, \pm\frac{7\pi}{6}, \pm\frac{14\pi}{6}$

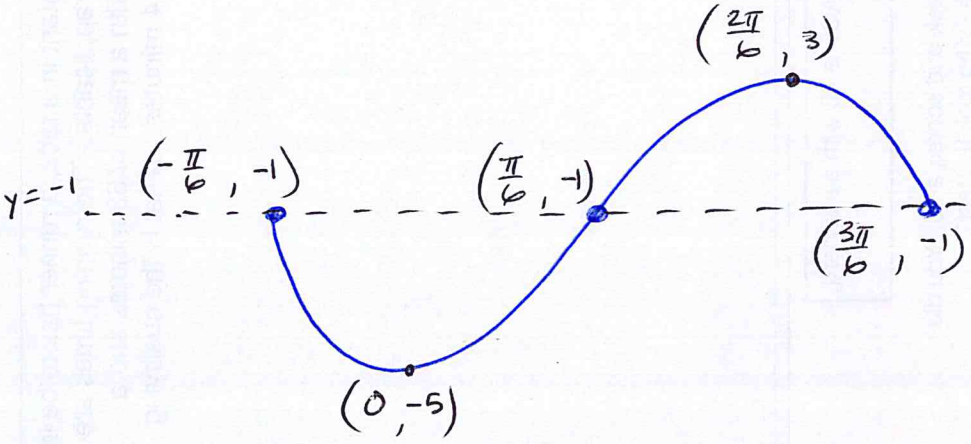
VA: $x = \pm\frac{7\pi}{12}, \pm\frac{21\pi}{12}, \pm\frac{35\pi}{12}$

③ $y = -4\sin\left(3\left(x + \frac{\pi}{6}\right)\right) - 1$

Amplitude $= 4$ midline: $y = -1$

period $= \frac{2\pi}{3}$ phase shift: $\frac{\pi}{6}$ left

upside down



$\frac{1}{4}$ period $= \frac{1}{4}\left(\frac{2\pi}{3}\right) = \frac{\pi}{6}$