

Fill in the blanks regarding the graph on the right. Simplify your answers.

NOTE: The x - coordinates of the two points highlighted are $-\frac{3\pi}{5}$ and $\frac{\pi}{5}$.

SCORE: ____ / 7 PTS

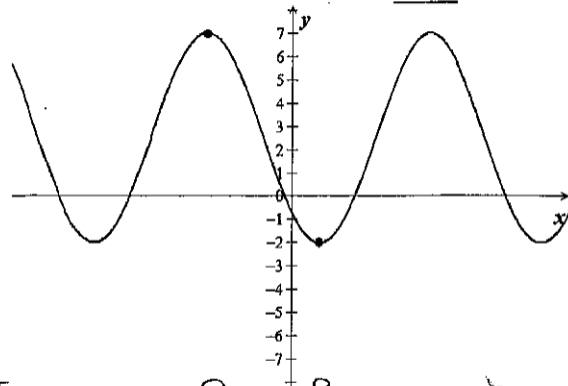
[a] Middle y - value = $\frac{5}{2}$ $\frac{7+(-2)}{2}$

[b] Amplitude = $\frac{9}{2}$ $\frac{7-(-2)}{2}$

[c] Phase shift = $-\frac{3\pi}{5}$

[d] Period = $\frac{8\pi}{5}$ $\frac{1}{2}P = \frac{\pi}{5} - (-\frac{3\pi}{5}) = \frac{4\pi}{5}$

[e] An equation of the graph is $y = \frac{9}{2} \cos \frac{5}{4} (x + \frac{3\pi}{5}) + \frac{5}{2}$



$\frac{2\pi}{B} = \frac{8\pi}{5} \rightarrow B = \frac{5}{4}$

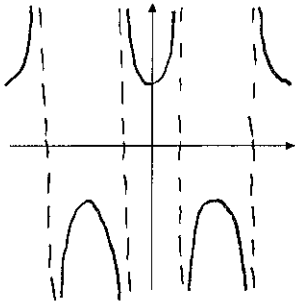
These questions are about the non-sinusoidal trigonometric functions.

SCORE: ____ / 8 PTS

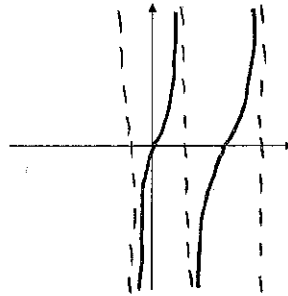
[a] Sketch 2 periods of the graphs of the following functions.

NOTE: You only need to get the general position and shape correct. Do NOT plot points.

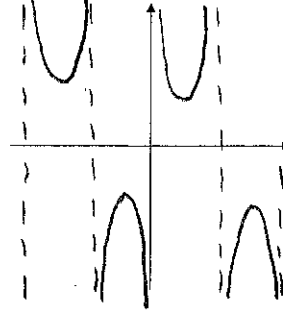
$$y = \sec x$$



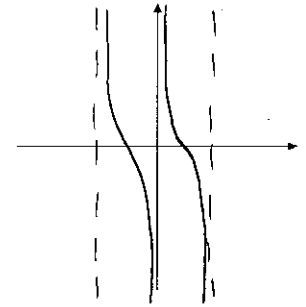
$$y = \tan x$$



$$y = \csc x$$



$$y = \cot x$$



[b] Fill in the blanks.

[1] As $x \rightarrow \pi^-$, $\csc x \rightarrow \underline{\infty}$.

[2] As $x \rightarrow \frac{\pi}{2}^+$, $\tan x \rightarrow \underline{-\infty}$.

[3] The equations of the vertical asymptotes of $y = \cot x$ are $\underline{x = n\pi}$, $n \in \mathbb{Z}$.

[4] The domain of $y = \sec x$ is $\underline{x \neq \frac{\pi}{2} + n\pi}$, $n \in \mathbb{Z}$.

