

4.4 Day 1 start

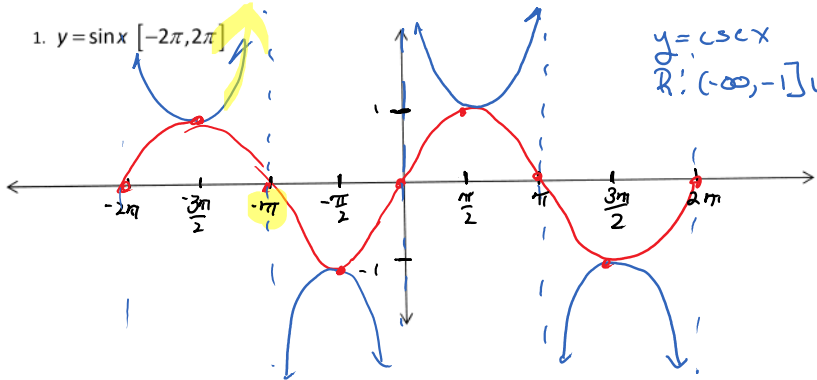
Tuesday, February 26, 2019 3:11 PM

Honors Precalculus
Trig Graph opener day 1

Name _____

Graph the following Trig functions on the given interval by plotting points every quarter of a period.

1. $y = \sin x [-2\pi, 2\pi]$

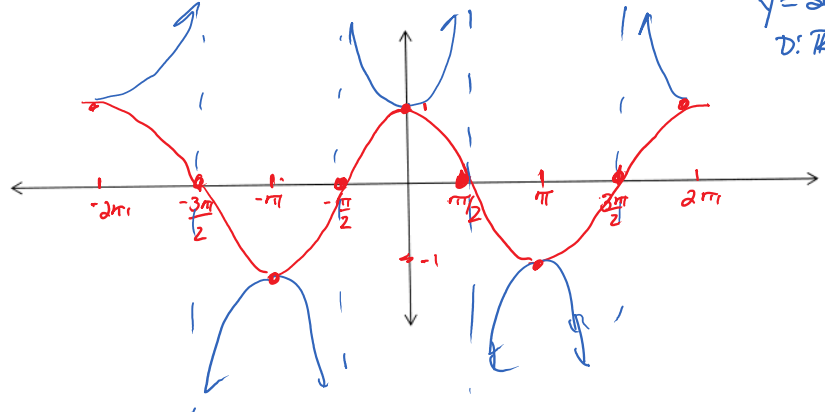


$y = \csc x$
 $R: (-\infty, -1] \cup [1, \infty)$

$x \neq 0 + \pi k$ $k = \text{integer}$

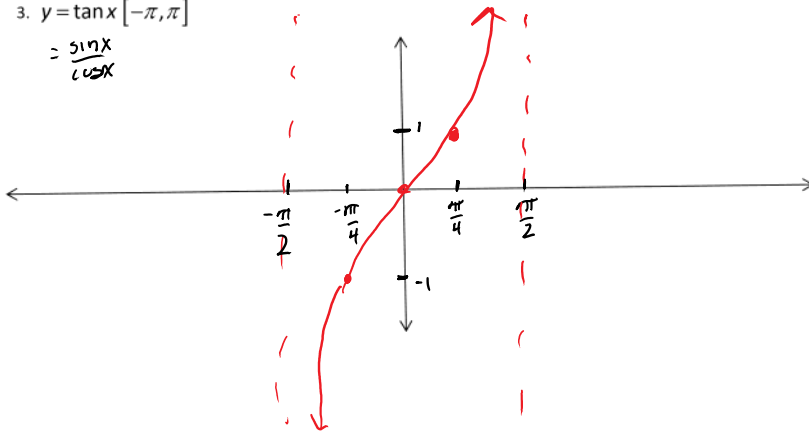
$\lim_{x \rightarrow -\pi^-} \csc x = \infty$

2. $y = \cos x [-2\pi, 2\pi]$

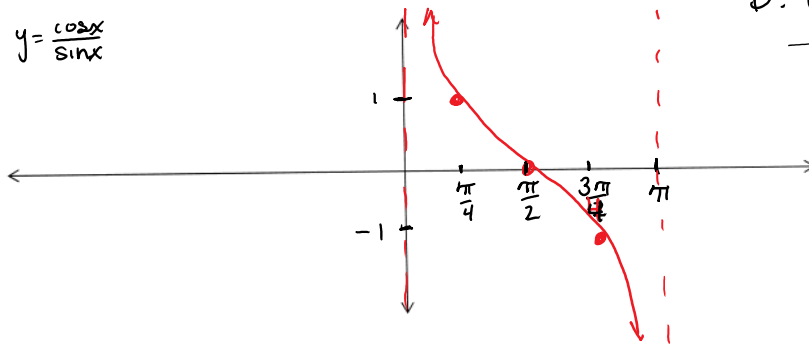


$y = \sec x$
 $D: \mathbb{R} \ x \neq \frac{\pi}{2} + \pi k$ $k = \text{integer}$

3. $y = \tan x [-\pi, \pi]$
 $= \frac{\sin x}{\cos x}$



4. $y = \cot x [-\pi, \pi]$
 $y = \frac{\cos x}{\sin x}$



D: $\mathbb{R} \ x \neq 0 + \pi k$ where k is integer

vertical Asy. $x = \pi k$

Recall what you know about transformations... For the equations below, list the type of transformation that each capital letter (A, B, C, and D) would do to the graph. (i.e. vertical stretch, etc)

$$y = A \sin B(x + C) + D$$

$$y = A \cos B(x + C) + D$$

A = Vertical stretch or shrink

C = Horiz. shift left or right

B = horiz. stretch or shrink

D = vert. shift up or down

For sinusoidal functions, each of those letters represents a particular characteristic about the graph. See if you can match the characteristic with the correct part of the equation.

1) Amplitude **A** $\frac{2\pi}{B}$

2) Phase Shift **C** D

3) Vertical Shift **D** $|A|$

4) Period $\frac{2\pi}{B}$ C

sinθ, cosθ,
secθ, cscθ

→ $\frac{\pi}{B}$ tanθ & cotθ

Recall that the period of a function is how long it takes to complete one cycle. Look back at your graphs on the previous page. What would the period be for both the sin and cos graphs?

One last thing ... notice that on both graphs 'something important' is happening every 90 degrees. In other words, the graph is either at zero, a maximum, or a minimum. We call these "**Critical Values**" and they will be very helpful to us as we begin graphing more complex equatio