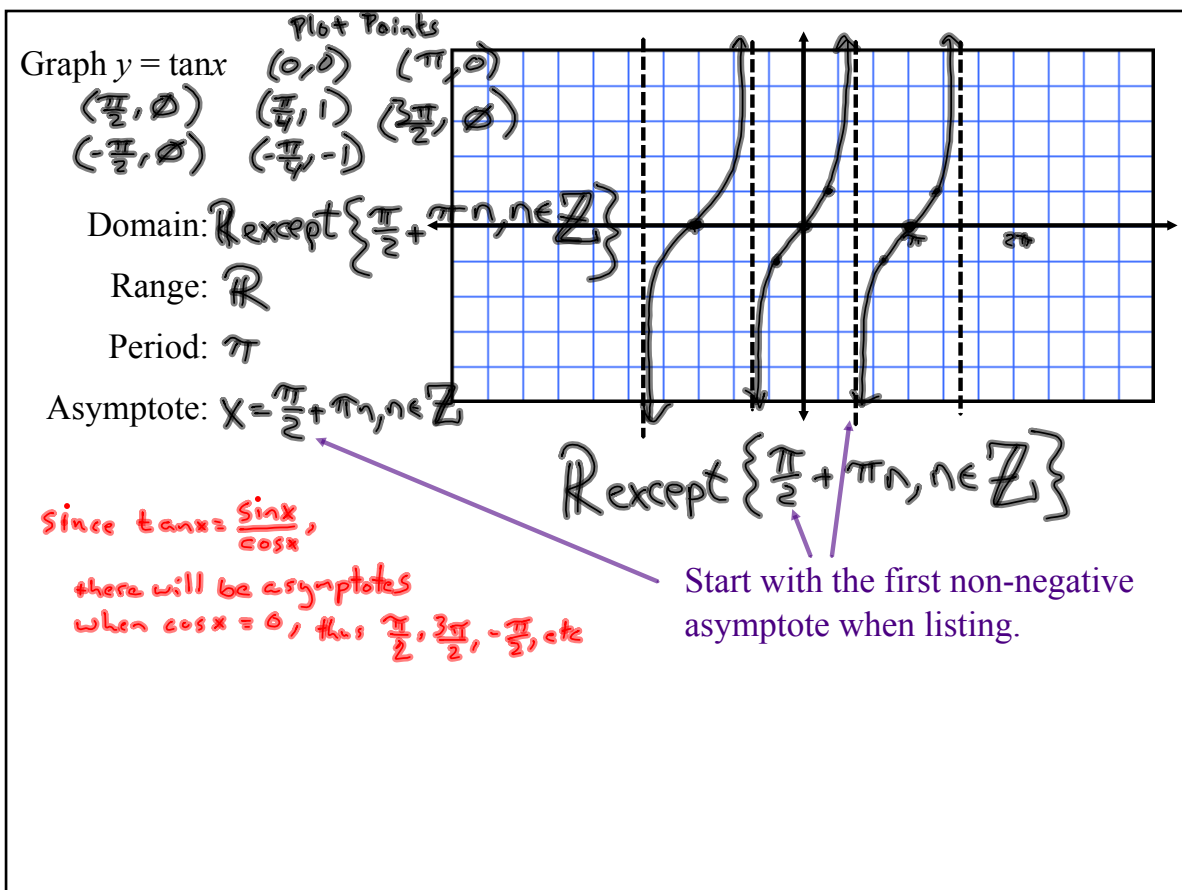


# Advanced Math

4-6

(Day 1)

## Graphs of Tangent and Secant Functions



Graph  $y = \sec x = \frac{1}{\cos x}$

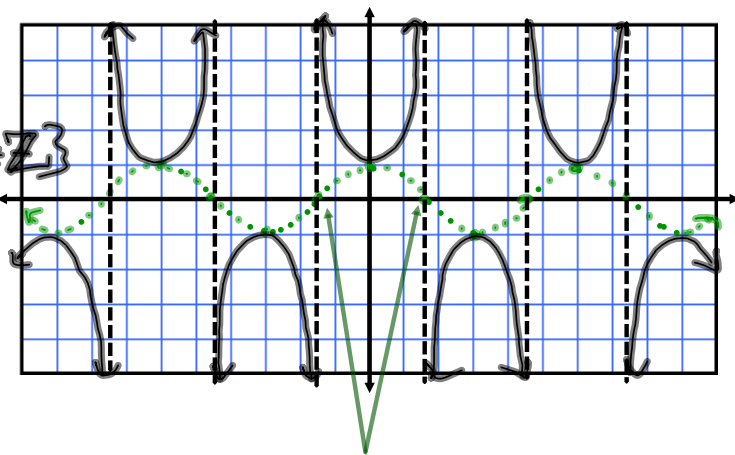
Domain:  $\mathbb{R} \text{ except } \{\frac{\pi}{2} + \pi n, n \in \mathbb{Z}\}$

Range:  $(-\infty, -1] \cup [1, \infty)$

Period:  $2\pi$

Asymptotes:

$x = \frac{\pi}{2} + \pi n, n \in \mathbb{Z}$

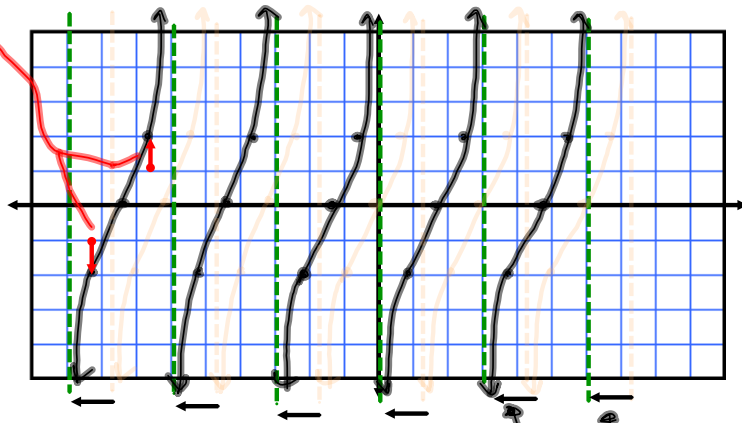


Graph based off the  $\cos x$  graph. Where  $\cos x = 0$  there will be asymptotes in the  $\sec x$ .

graph:  $y = 2\tan(x + \frac{\pi}{2})$

pd:  $\frac{\pi}{1} = \pi$

$(\frac{\pi}{4}, 2)$   
 $(-\frac{\pi}{4}, -2)$



phase shift

$\frac{\pi}{2}$  to the left or  $-\frac{\pi}{2}$

Assignment:

Graph each of the following.

1)  $f(x) = 6\sin\left(\frac{\pi x}{5}\right) + 1$

2)  $g(x) = -2\cos\left(\frac{1}{2}x + \frac{\pi}{2}\right)$

3)  $h(x) = \tan x$

4)  $f(x) = -3\sin\left(3x - \frac{\pi}{2}\right)$

5)  $f(x) = \tan\left(\frac{1}{2}x + \frac{\pi}{6}\right)$

6)  $f(x) = 2\sec x$