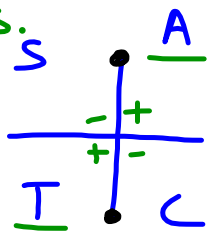
Section 4.5: Graphs of Tan, Cot, Csc, Sec

all have undefined values → so they all will have asymptotes.

- $y = \tan x$



Tan has repeating values every 180° (π)

So it has period $= \pi$

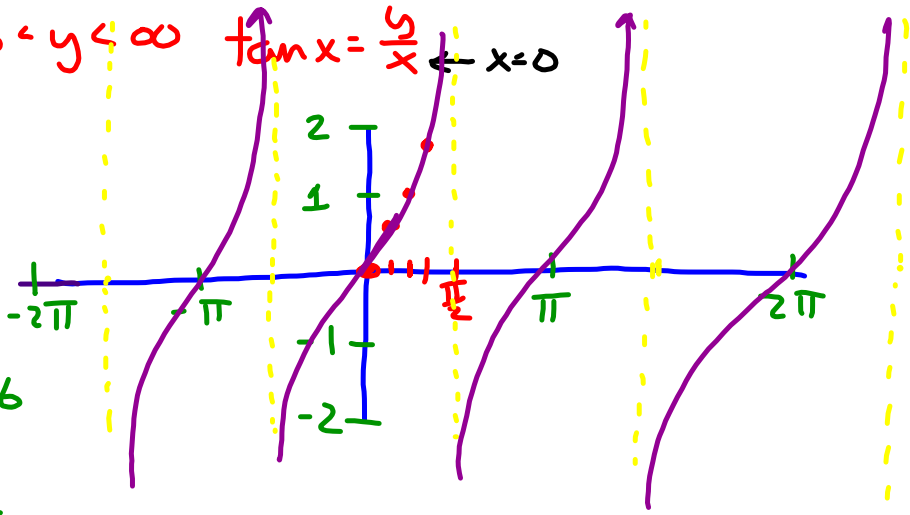
Domain: $x \neq \frac{\pi}{2} + n\pi$

Range: $-\infty < y < \infty$

$\tan x = \frac{y}{x}$ ← $x = 0$

$y = \tan x$

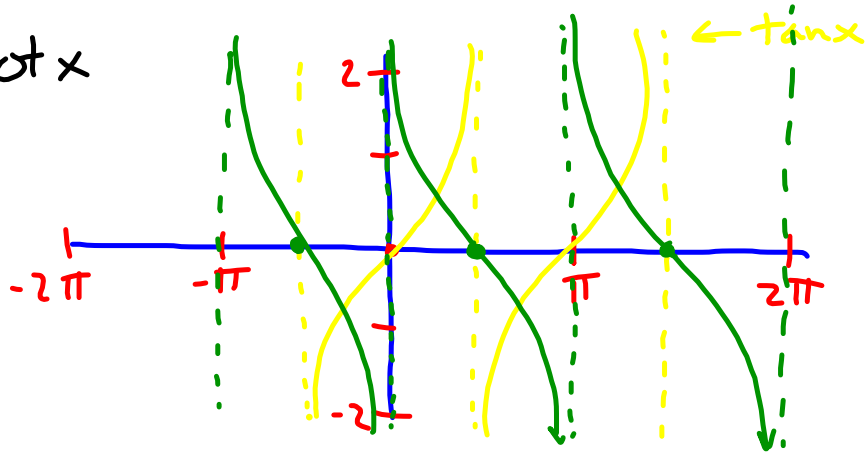
x	y
0	0
$\pi/6$	$\sqrt{3}/3 = .56$
$\pi/4$	1
$\pi/3$	$\sqrt{3} = 1.7$
$\pi/2$	u



Period (tangent) $= \frac{\pi}{b}$

cotangent too

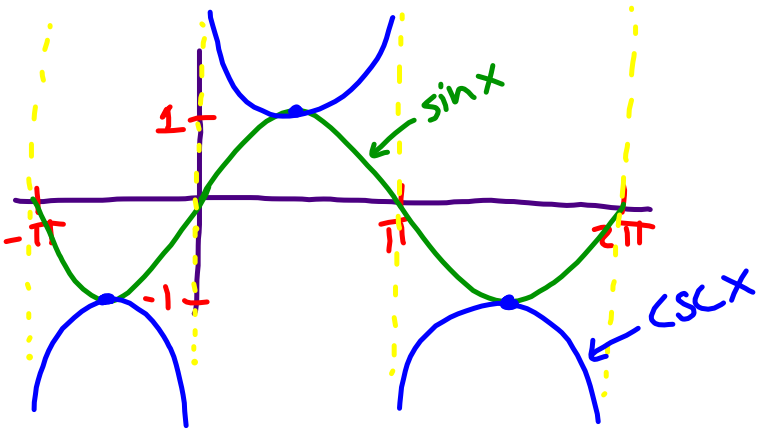
$y = \cot x$



$y = \csc(x)$

$\uparrow$

$\frac{1}{\sin}$



4.4; 1-21 odd
31-34 all