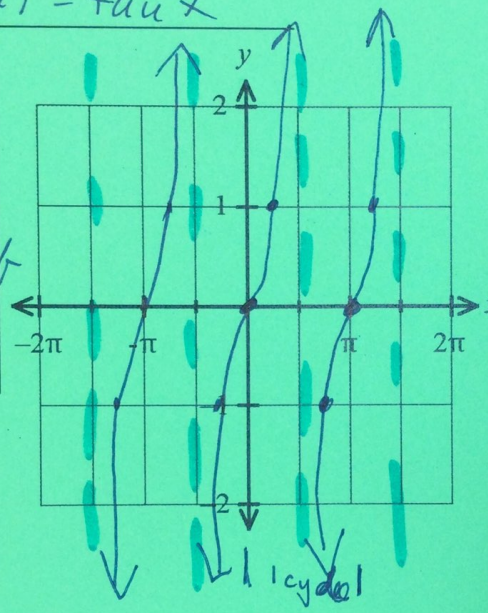
Name of Graph: tangent

Equation: $f(x) = \tan x$

x	$f(x)$
0	0
$\pi/4$	1
$\pi/2$	undef
$3\pi/4$	-1
π	0



Key Features

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

Range: $(-\infty, \infty)$

x-intercept(s): $x = 0 + \pi k$

y-intercept: $(0, 0)$

Increasing: $x \neq \frac{\pi}{2} + \pi k$

Decreasing: none

Constant: none

Positive: periodic

Negative: periodic

Maximums /Minimums

Symmetry: odd none

End Behavior:

$\lim_{x \to -\infty} f(x) =$ N/A

$\lim_{x \to \infty} f(x) =$ N/A

Vertical stretch: 1

Vertical Shift: 0

Period: π

Phase Shift: 0

Asymptote equation:

$x = \frac{\pi}{2} + \pi k$

Steps for solving tangent equation:

(1) get tangent by itself

(2) draw 2 Δ's in correct Quadrant & label sides

(3) figure out ref angle

(4) find angle in standard position

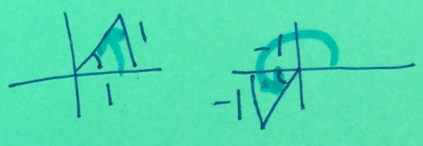
(5) if no interval in directions write eq.

ex

$5\tan x - 5 = 0$

$5\tan x = 5$

$\tan x = 1$



ref $\angle = 45°$

$[0°, 360°)$ $x = 45°, 225°$

$[0, 2\pi)$ $x = \frac{\pi}{4}, \frac{5\pi}{4}$

no interval

$x = 45° + 180°k$

or $x = \frac{\pi}{4} + \pi k$