6.3 Trigonometric FUNCTIONS

A trig function is... a function with a trig ratio in it

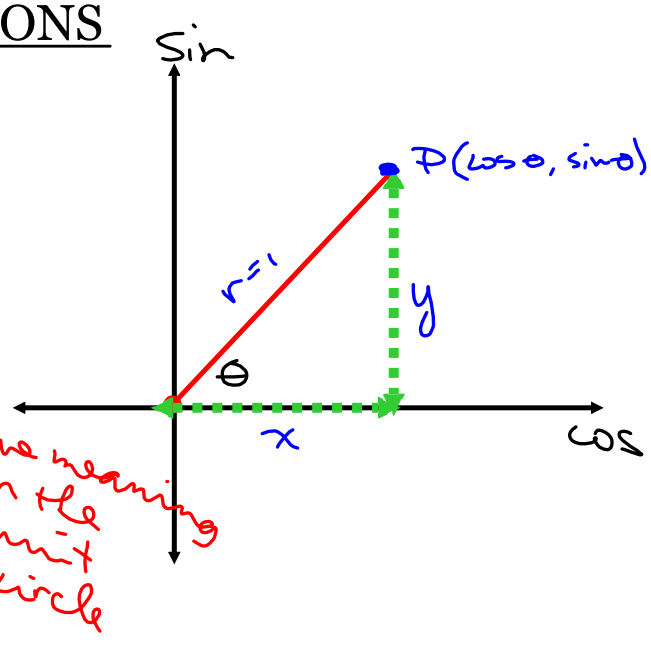
ex// $y = 2\sin(\pi x)$

What exactly are we graphing?

$f(\theta) = \sin\theta$

$f(\beta) = \cos\beta$

$f(t) = \tan t = \frac{\sin t}{\cos t}$



have meaning on the unit circle

So a graph of

$f(\theta) = \sin\theta$ is... how high P is above the x-axis (+ is ↑, − is ↓)

$f(\theta) = \cos\theta$ is... how far left or right P is from the y-axis (+ is →, − is ←)

$f(\theta) = \tan\theta$ is... the slope of the hypotenuse (radius)

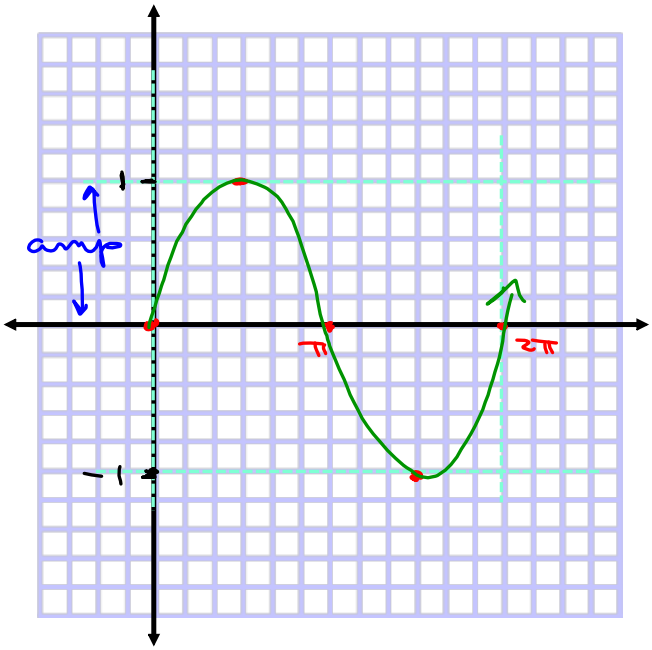
$f(\theta) = \sin\theta$

period: 2π

amplitude: 1

axis: $y = 0$

phase shift: none



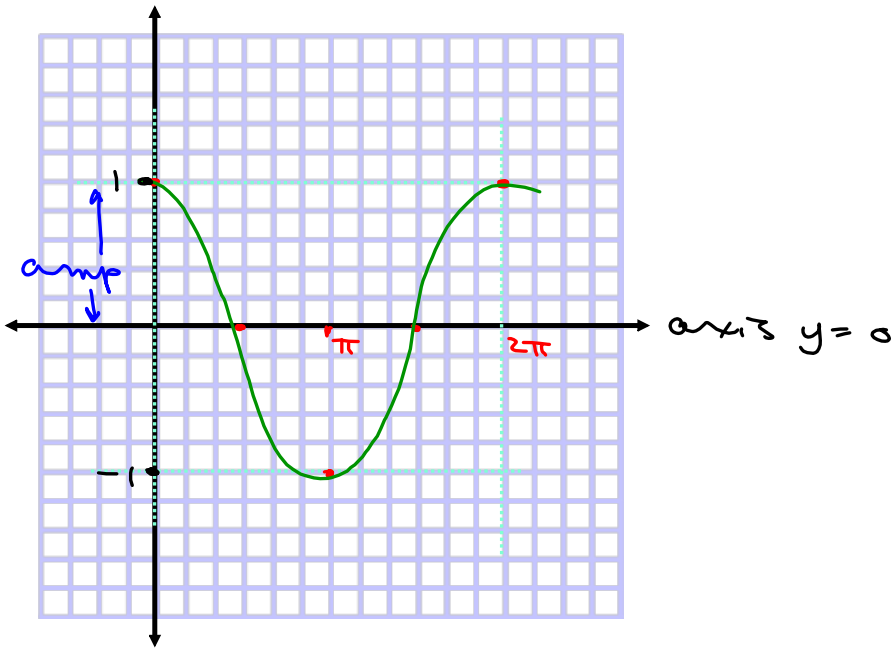
$f(\theta) = \cos\theta$

period: 2π

amplitude: 1

axis: $y = 0$

phase shift: none



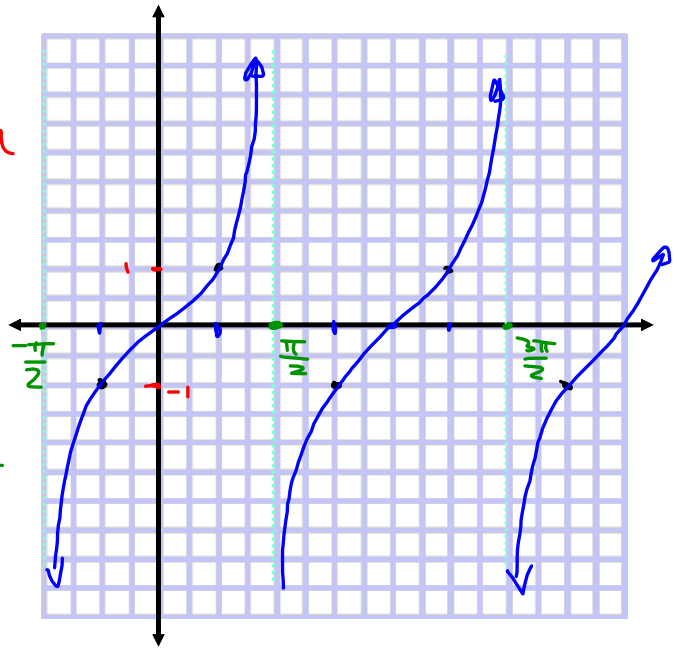
$f(\theta) = \tan\theta$ $= \frac{\sin\theta}{\cos\theta}$ $\cos\theta \neq 0$

period: π

amplitude: undefined ∞

axis: none

phase shift: none



asymptotes

$\theta = 90°, 270°, \ldots$

$= \frac{\pi}{2}, \frac{3\pi}{2}, \ldots$

$\theta \neq \frac{\pi}{2} + \pi n, \; n \in I$

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