

P.44  
 (37)  $\ln y = 2t + 4$       (33)  $1.045^t = 2$   
 $e^{2t+4} = y$        $t = \frac{\ln 1.045 - \ln 2}{\ln 1.045}$   
 $y_1 = 1.045^t t =$   
 $y_2 = 2$

Sep 15-1:15 PM

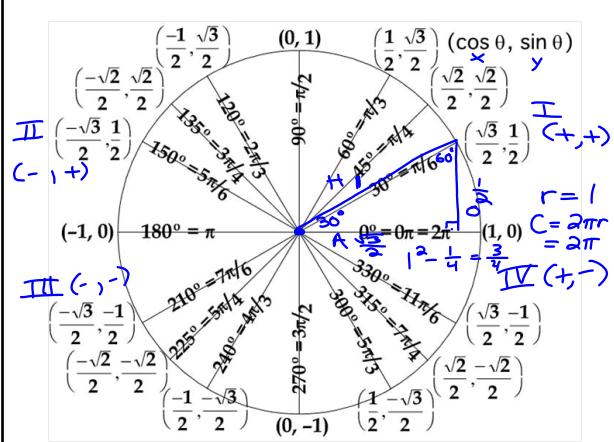
Q: Why do mathematicians like parks?

A: It's because of all of the natural logs.

## 1-6 Trig Functions

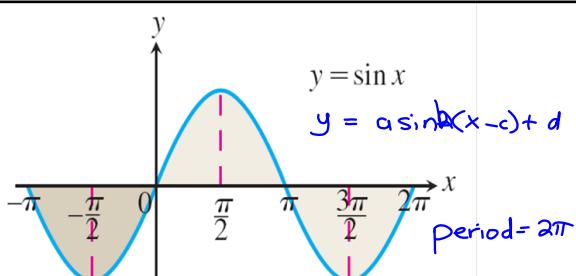
### Learning Objectives:

- I can create a unit circle and use it to calculate the exact values of any of the 6 trig functions at any of the special angles.
- I can graph any of the trig functions without the use of a graphing calculator.
- I can solve trig equations.
- I understand the relationship between any trig function and its inverse.



Sep 4-9:33 AM

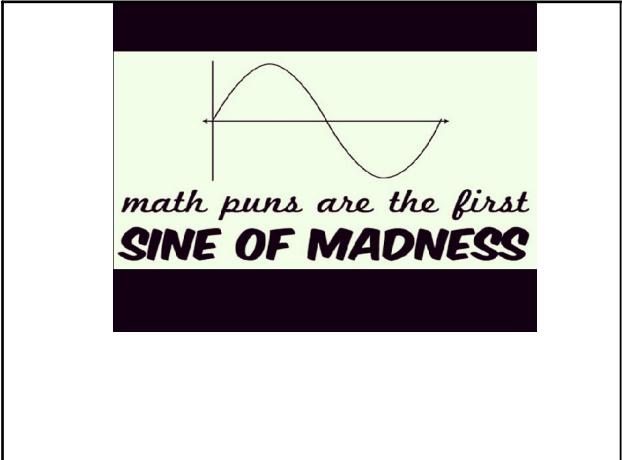
Sep 4-9:33 AM



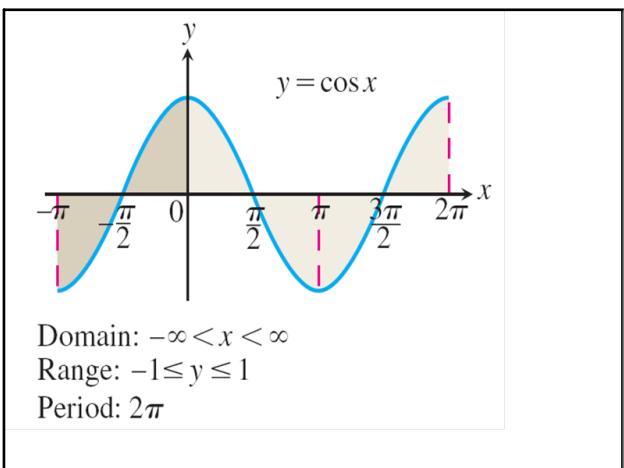
Domain:  $-\infty < x < \infty$   
 Range:  $-1 \leq y \leq 1$   
 Period:  $2\pi$

Sep 4-9:33 AM

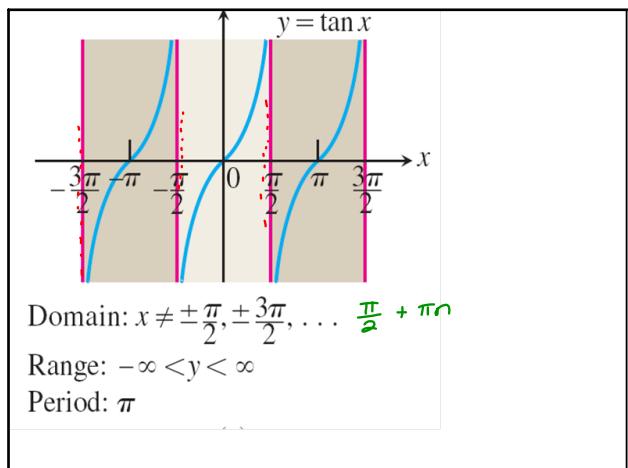
math puns are the first  
**SINE OF MADNESS**



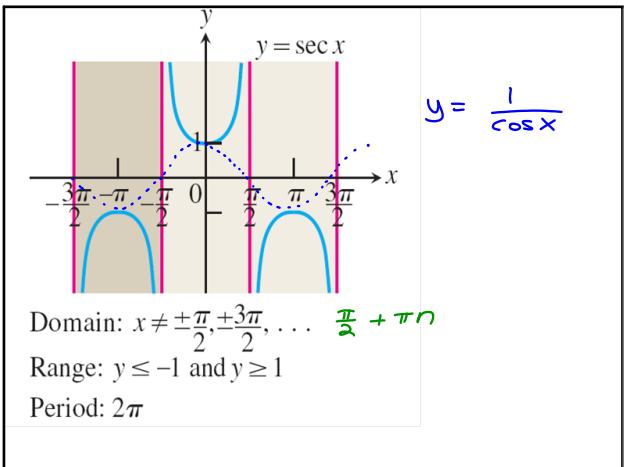
Sep 15-9:18 AM



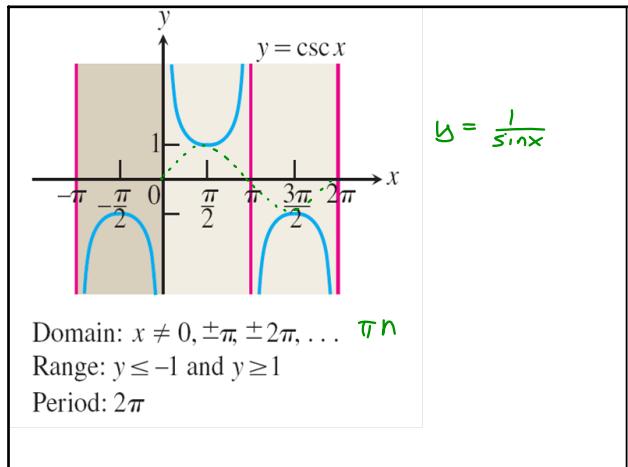
Sep 4-9:33 AM



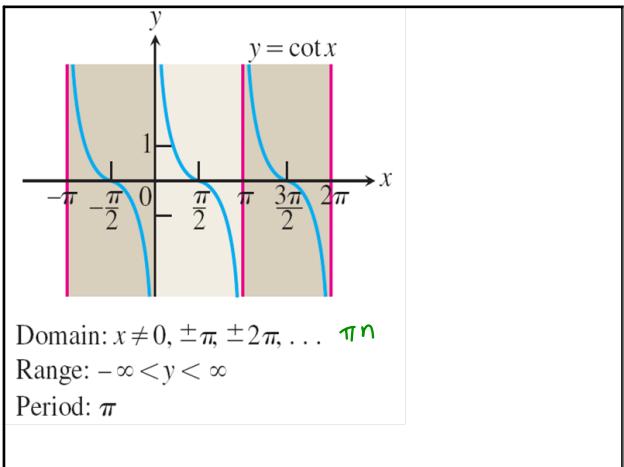
Sep 4-9:33 AM



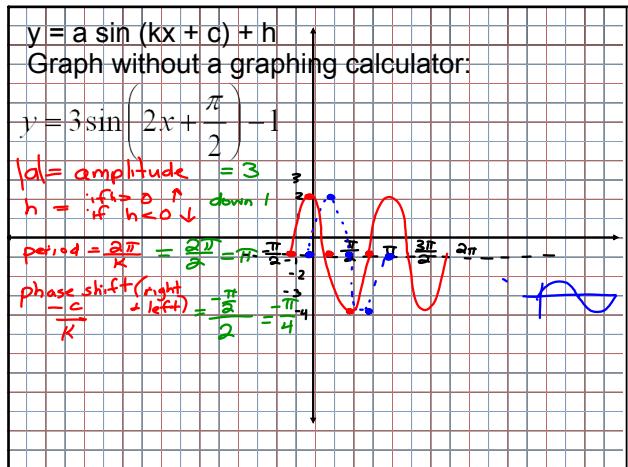
Sep 4-9:33 AM



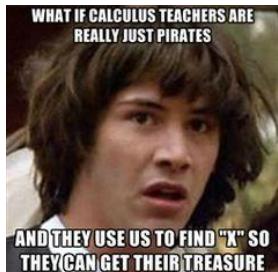
Sep 4-9:33 AM



Sep 4-9:33 AM



Mar 9-10:16 AM

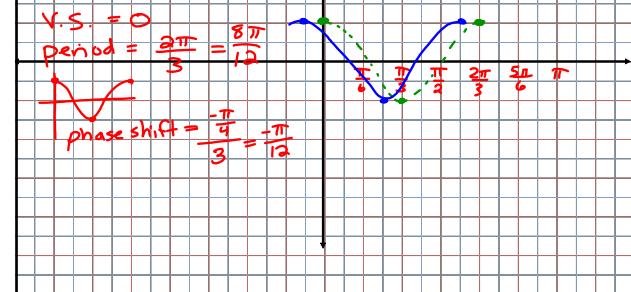


## Ex1. Graph (w/o a G.C.)

$$1.) 2\cos\left(3x + \frac{\pi}{4}\right)$$

Amp = 2

V.S. = 0

Period =  $\frac{2\pi}{3}$  $= \frac{8\pi}{12}$ phase shift =  $-\frac{\pi}{4}$  $= -\frac{\pi}{3}$ 

Sep 15-9:20 AM

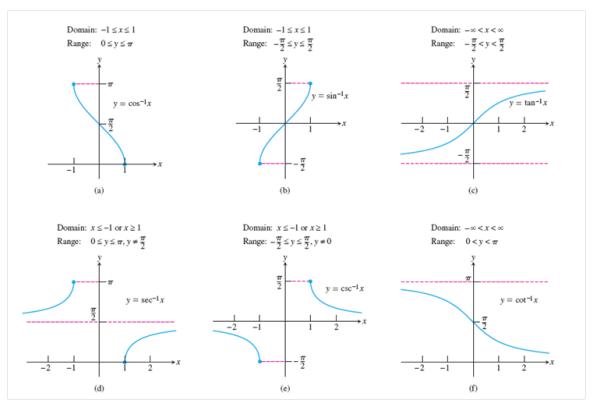
Mar 9-10:16 AM

## Graph (w/o a G.C.)

$$2.) y = \tan(4x - \pi) + 1$$

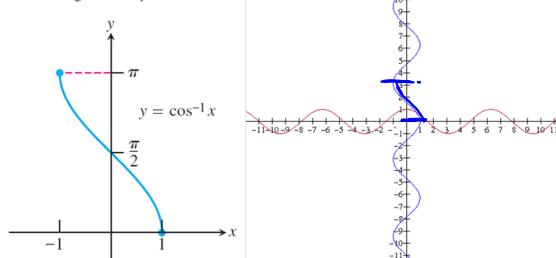
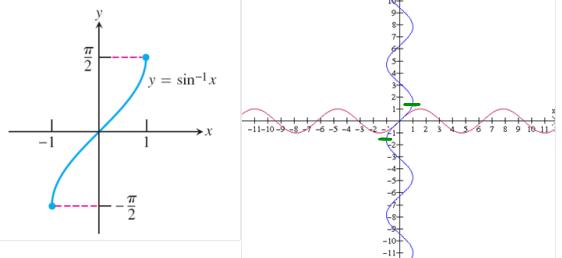
amp = none

V.S. = up!

P.S. =  $\frac{\pi}{4}$ Period =  $\frac{\pi}{4}$ 

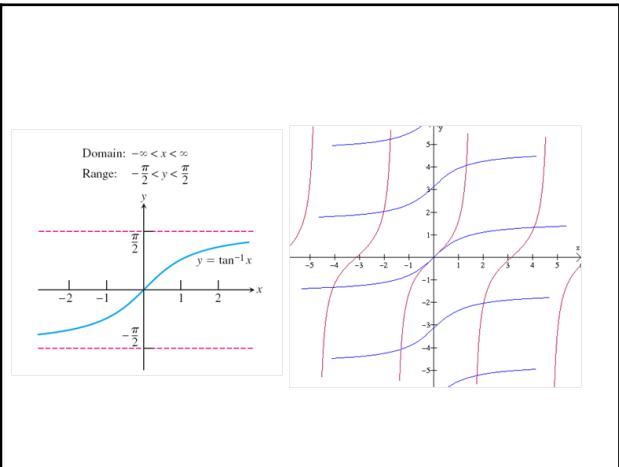
Mar 9-10:16 AM

Sep 4-9:33 AM

Domain:  $-1 \leq x \leq 1$   
Range:  $0 \leq y \leq \pi$ Domain:  $-1 \leq x \leq 1$   
Range:  $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$ 

Sep 4-9:33 AM

Sep 4-9:33 AM



Sep 4-9:33 AM

**Ex2.** Solve for the specified interval

1.)  $2\cos x - \sqrt{3} = 0$  all values of  $x$

$$\cos x = \frac{\sqrt{3}}{2}$$

$$x = \frac{\pi}{6} + 2\pi n$$

$$x = \frac{11\pi}{6} + 2\pi n$$

2.)  $\sqrt{3}\tan x - 3 = 0$   $0 \leq x \leq 2\pi$

$$\tan x = \frac{3\sqrt{3}}{\sqrt{3}\sqrt{3}} = \sqrt{3}$$

$$x = \frac{\pi}{3}, \frac{4\pi}{3}$$

3.)  $\sqrt{2}\sin x + 2 = 1$   $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$

$$\sin x = \frac{-1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$$

$$x = -\frac{\pi}{4}$$

Sep 4-9:33 AM

## Homework

pg 52 # 7, 12, 13, 16, 18, 24, 31-36, 52-55

### Learning Objectives:

- I can create a unit circle and use it to calculate the exact values of any of the 6 trig functions at any of the special angles.
- I can graph any of the trig functions without the use of a graphing calculator.
- I can solve trig equations.
- I understand the relationship between any trig function and its inverse.

Sep 4-9:33 AM