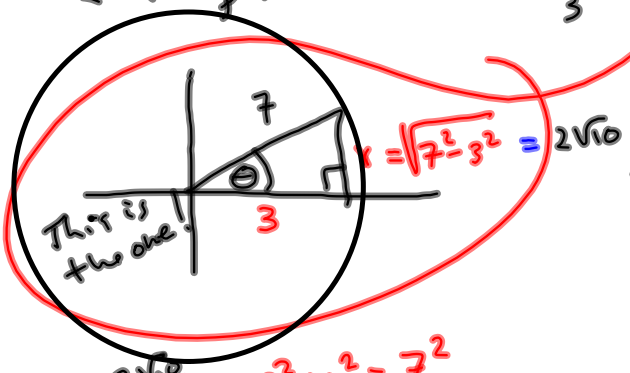
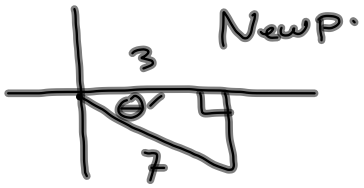
$\sec\theta = \frac{7}{3}$ and $0 \le \theta \le \pi$

2 triangles w/ $\sec\theta = \frac{7}{3}$





$\sin\theta = \frac{2\sqrt{10}}{7}$

$\cos\theta = \frac{3}{7}$

$\tan\theta = \frac{2\sqrt{10}}{3}$

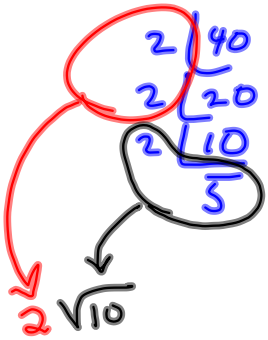
$3^2 + x^2 = 7^2$

$x^2 = 49 - 9$

$\sqrt{x^2} = \sqrt{40}$

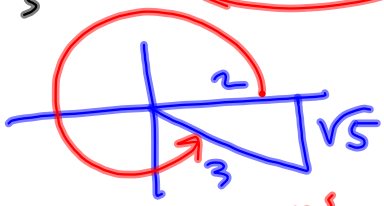
$|x| = \sqrt{40}$

$x = \sqrt{40}$ or $x = -\sqrt{40}$



③ $\cos\theta = \frac{2}{3}$ and $\pi < \theta < 2\pi$

Nawp



Yeppers

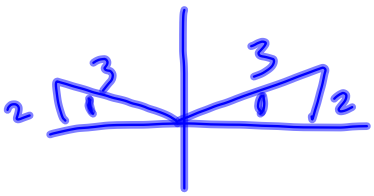
$\cos = \frac{2}{3}$

$\cos\theta \frac{2}{3}$

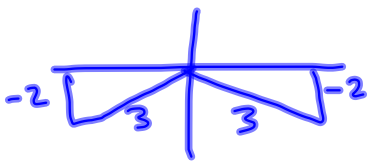
Use proper grammar & syntax.

$\sqrt{3^2 - 2^2} = \sqrt{5}$

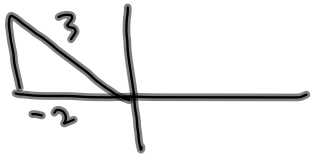
$\sin\theta = \frac{2}{3}$

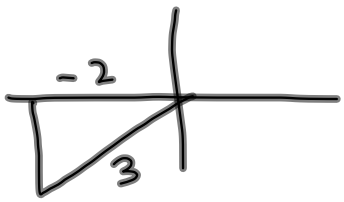


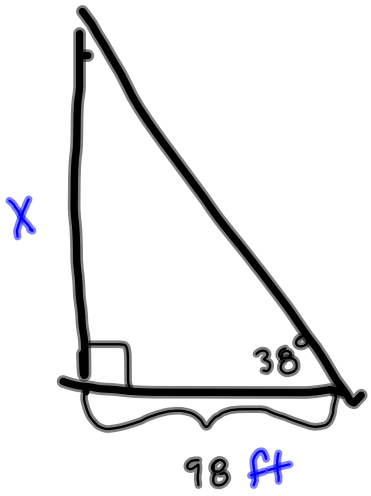
$\sin\theta = -\frac{2}{3}$



$\cos\theta = -\frac{2}{3}$





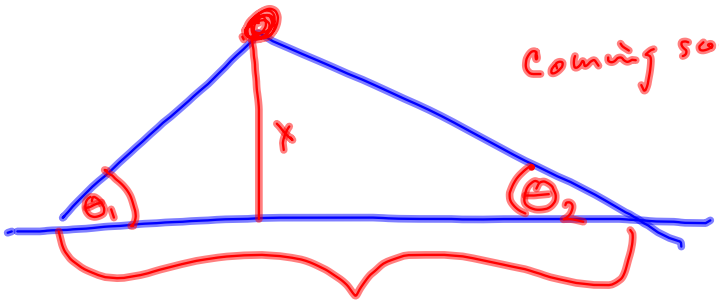


$\frac{x}{98} = \tan 38°$

$x = 98 \tan 38°$

≈ 76.566 ft

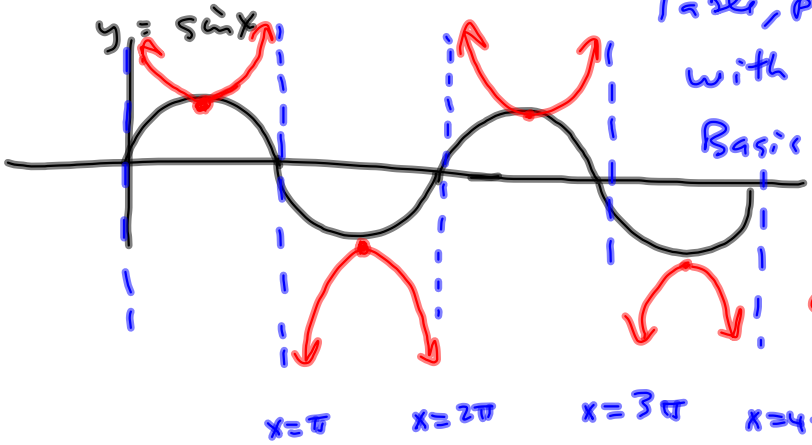
Triangulating



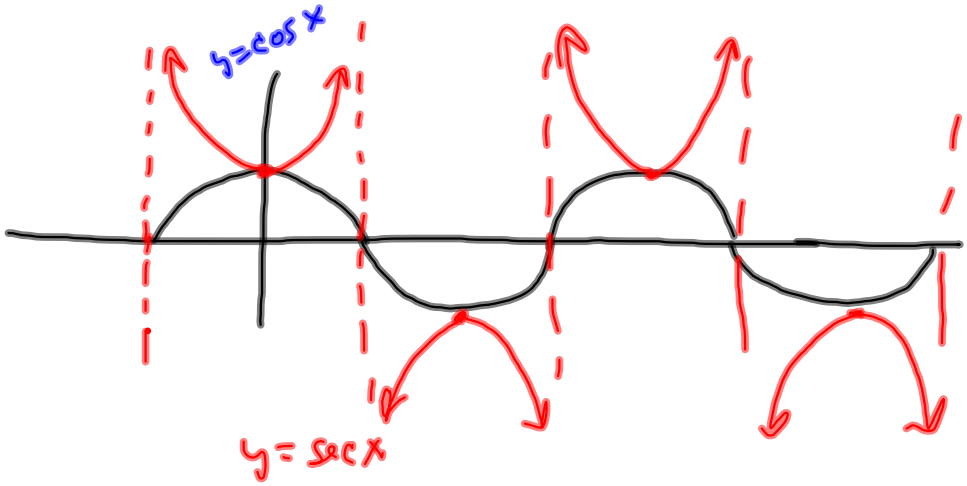
Coming soon!

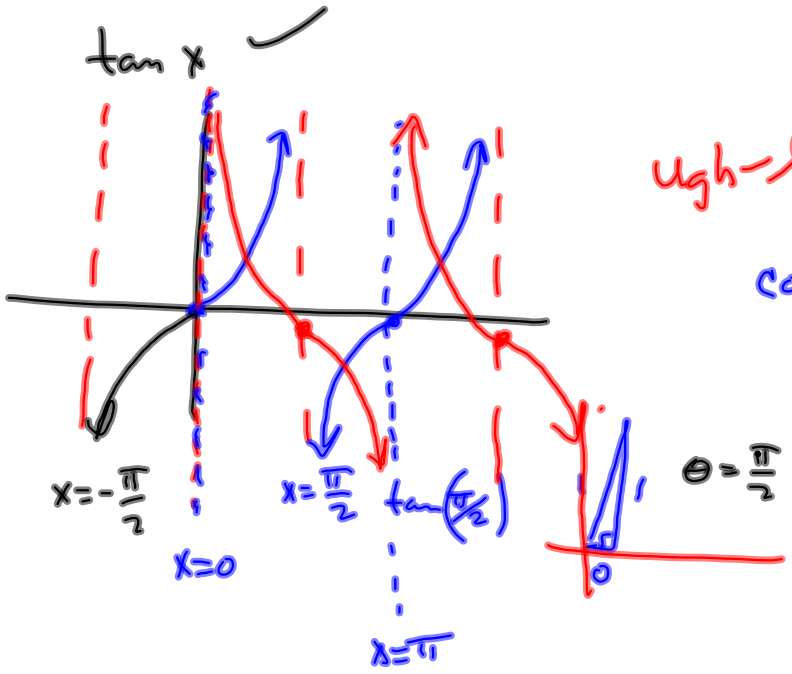
For the rest of Quiz, see website

Table, pg 190 with all the Basic Trig Graphs



$\csc x = \frac{1}{\sin x}$





ugh-ly

$\cot x = \frac{1}{\tan x}$

$\frac{x}{y} = \frac{1}{\frac{y}{x}}$

$g(x) = 17\tan\left(\frac{\pi}{3}x - \pi\right) + 57$

$= 17\tan\left(\frac{\pi}{3}(x-3)\right) + 57$

$\frac{\pi}{\frac{\pi}{3}} = \pi \cdot \frac{3}{\pi} = 3$

counter-intuitive

$f(x) = \tan x$

$f\left(\frac{\pi}{3}x\right) = \tan\left(\frac{\pi}{3}x\right) \quad (x,y) \longrightarrow \left(\frac{x}{\frac{\pi}{3}}, y\right)$

$f(2x): (x,y) \longrightarrow \left(\frac{x}{2}, y\right)$

$f\left(\frac{\pi}{3}(x-3)\right) = \tan\left(\frac{\pi}{3}(x-3)\right)$

$(x,y) \longrightarrow (x+3, y)$

Delay by 3

Takes $x+3$ to get where x used to get us.

$17 f\left(\frac{\pi}{3}(x-3)\right) = 17\tan\left(\frac{\pi}{3}(x-3)\right)$

$(x,y) \longrightarrow (x, 17y)$

$17 f\left(\frac{\pi}{3}(x-3)\right) + 57 = 17\tan\left(\frac{\pi}{3}(x-3)\right) + 57$

$(x,y) \longrightarrow (x, y+57)$

$f(\frac{\pi}{3}x) = \tan(\frac{\pi}{3}x)$

$f(\frac{\pi}{3}(x-3)) = \tan(\frac{\pi}{3}(x-3))$

$17f(\frac{\pi}{3}(x-3)) = 17\tan(\frac{\pi}{3}(x-3))$

I wish I'd done it this way:

$\tan(\frac{\pi}{3}x)$ Main thing

$17\tan(\frac{\pi}{3}x)$ stretch

$17\tan(\frac{\pi}{3}(x-3))$ before

$17\tan(\frac{\pi}{3}(x-3))+57$ Shift

$17\left(f(\frac{\pi}{3}(x-3))+57\right) = 17\tan(\frac{\pi}{3}(x-3))+57$

A good order for Building these is

$f(ax)$ stretches first!

$bf(ax)$

$bf(a(x+c))$

$bf(a(x+c))+d$

See #3 on homework.

You're given some data to build a cosine function. Getting its period and amplitude 1st is the wise choice

High = 25

Low = -10

Amplitude $= \frac{25-(-10)}{2}$

$= \frac{35}{2}$

$\frac{35}{2}\cos(\theta)$

Period 24 hrs

$\frac{2\pi}{b} = 24$

$\frac{35}{2}\cos(\frac{\pi}{12}\theta)$

$\frac{\pi}{12} = \frac{2\pi}{24} = b$