> 6.4 Day 2
> Notes Day 2
> Finish homework from last class.
> Starter #1 w/unit circle
> SLO Pre-test

Jan 18-10:05 AM

Questions 1-18...

(9) $\tan x = \frac{\sqrt{3}}{3}$ $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$ $\frac{y}{x}$ $\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}}$ $\frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$ $\frac{\sqrt{3}}{3}$

30° 60°

any angle 30° away x-axis

$x = \frac{\pi}{6}, \frac{7\pi}{6}$

Jan 18-10:36 AM

(17) $\csc x = -1$

$\sin x = -1$

$x = \frac{3\pi}{2}$

Jan 20-10:31 AM

6.4 Notes Day 2

use the entire unit circle

Use technology to find all solutions in the interval $[0,2\pi)$ to the trigonometric equation.

This is the same as $0 \leq x < 2\pi$

Jan 18-10:40 AM

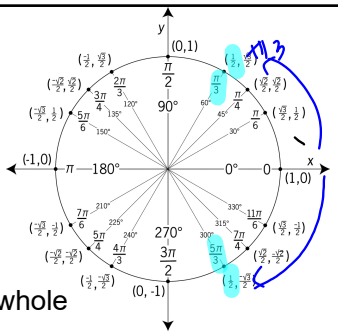
Ex) cos x = 1/2

Cos is the x-value

x=1/2 at $\frac{\pi}{3}$

Notice $\frac{5\pi}{3}$

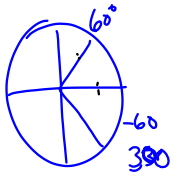
is just short of the whole circle 2π



To find the cos you subtract from 2π

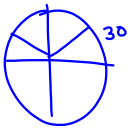
$2\pi - \frac{\pi}{3} = \frac{5\pi}{3}$

Jan 18-10:46 AM



$360 - 60$

$2\pi - \frac{\pi}{3}$



$\pi - 30$

Jan 20-10:35 AM

Positive:

sin x	cos x	tan x
$\pi - \theta$	$2\pi - \theta$	$\pi + \theta$

Negative:

sin x	cos x	tan x
$3\pi - \theta$	$2\pi - \theta$	$\theta - \pi$

Jan 18-3:20 PM

Sometimes you will get a negative angle for the answer. You always need to convert this to a positive angle by adding 2π to get θ

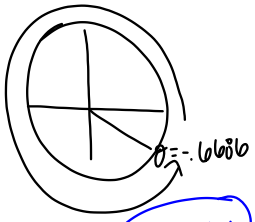
Ex) $\tan x = -.79$

$x = \tan^{-1} -.79$

$x = -.6686$

$-.6686 + 2\pi$

$\theta = 5.6146$



To finish now use the chart

$\theta - \pi$

$\theta = 5.61$

$\theta = 2.47$

Jan 18-3:31 PM

d) $\cos x = .75$ Make sure to be in radian mode

$\cos^{-1} .75$ θ = First angle

Start with $2\pi - \cos^{-1} .75$ or 2π - your answer

$2\pi - \theta$

$2\pi - .72$

$\theta = .72$

$\theta = 5.56$

Jan 18-10:43 AM

e. $\tan x = -2.4$

$\theta - \pi$

$\tan^{-1} -2.4$

$+2\pi$

$\theta = 5.11$

$\theta = 1.97$

Jan 18-3:19 PM

Find all solutions in the interval $[0, 2\pi)$ to the trigonometric equation.

f. $2\sin x + \sqrt{3} = 0$

$-\sqrt{3} \quad -\sqrt{3}$

$\frac{2}{2} \sin x = -\frac{\sqrt{3}}{2}$

$\sin x = -\frac{\sqrt{3}}{2}$

$x = \frac{4\pi}{3}, \frac{5\pi}{3}$

Jan 18-3:43 PM

g. $\sin x \cos x - 3\cos x = 0$ GCF

$\cos x (\sin x - 3) = 0$

$\cos x = 0$ $\sin x = 3$ DNE

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

Jan 18-3:44 PM

h. $2\cos^2 x-\cos x-1=0$ u=cosx

Solve: $2u^2-u-1=0$

$a=2\ b=-1\ c=-1$ -2, 1, -2, -1

$(2u+1)(2u-2)$

$(2u+1)(u-1)$

$2u+1=0 \quad u-1=0$

$u=-\frac{1}{2} \quad u=1$

$\cos x=-\frac{1}{2} \quad \cos x=1$

$x=\frac{2\pi}{3}, \frac{4\pi}{3}, 0$

Jan 18-3:45 PM

41. $4\cos^2 x-1=0$ u=cosx

Solve $4u^2-1=0$ Factor

$(2u+1)(2u-1)$

$u=-\frac{1}{2} \quad u=\frac{1}{2}$

$\cos x=-\frac{1}{2} \quad \cos x=\frac{1}{2}$

$x=\frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

Jan 18-3:47 PM

Extra credit

5 - Fri after school

5 - mon before school

5 - Tue before school

Be here at 7 30 min

Jan 20-10:58 AM