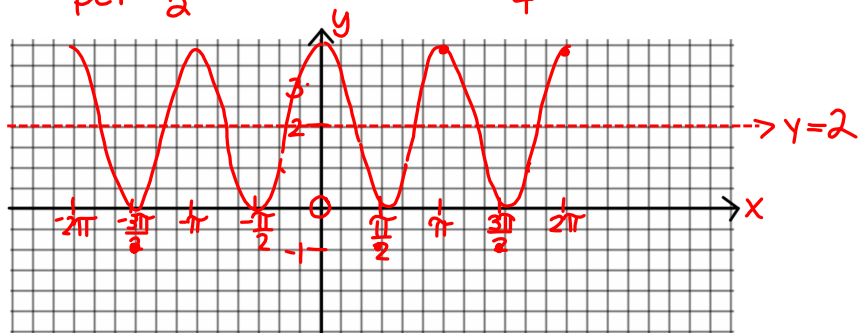


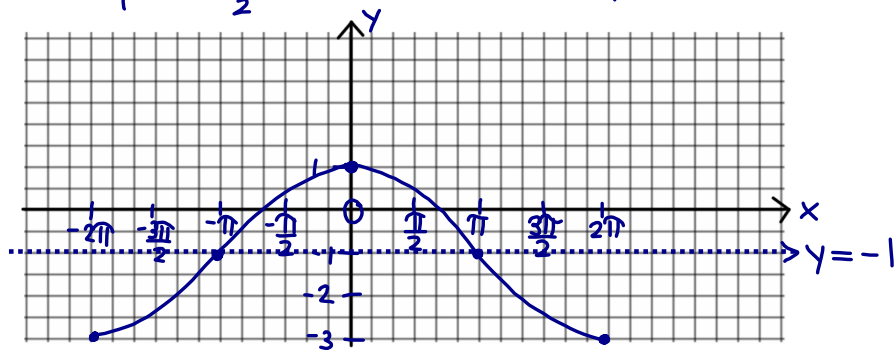
1. $y = 2\cos 2x + 2$
 amp 2 range $[0, 4]$ freq = $\frac{1}{\pi}$
 vs 2 per $\frac{2\pi}{2} = \pi$ xsc1 $\frac{\pi}{4}$



Dec 21-7:12 AM

2. $y = 2\cos \frac{1}{2}x - 1$
 amp 2 range $[-3, 1]$ freq $\frac{1}{4\pi}$
 vs -1 per $\frac{2\pi}{\frac{1}{2}} = 4\pi$ xsc1 $\frac{4\pi}{4} = \pi$

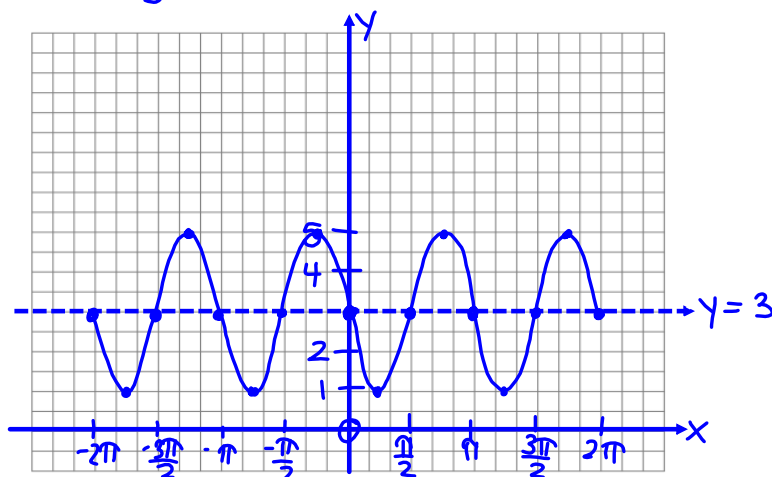
2.



Dec 21-7:12 AM

$y = -2\sin 2x + 3$
 amp 2 range $[1, 5]$ per $\frac{2\pi}{2} = \pi$ freq = $\frac{1}{\pi}$ xsl $\frac{\pi}{4}$
 vs 3

3.



Dec 21-7:12 AM

Review Day

TEST Tomorrow
No Calculator

Dec 4-2:33 PM

Warm-up: Simplify the following.

1. $\sec^2 x \cos x$

$$= \frac{1}{\cancel{\cos^2 x}} \cdot \frac{\cancel{\cos x}}{1}$$

$$= \frac{1}{\cos x} = \sec x$$

2. $\csc^2 x \sin x$

$$= \frac{1}{\cancel{\sin^2 x}} \cdot \frac{\cancel{\sin x}}{1}$$

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

Dec 17-3:33 PM

Review day

TEST Tomorrow

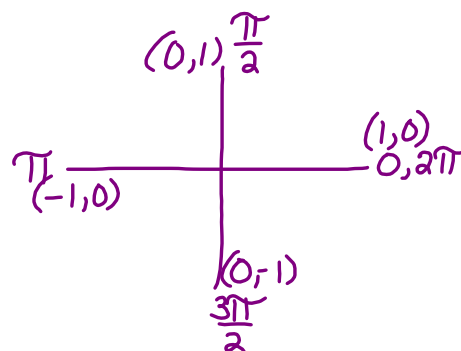
ADD:

2c. $\sin \frac{4\pi}{3} \tan \frac{7\pi}{6} - \cos \frac{4\pi}{3} \sin \frac{7\pi}{6}$

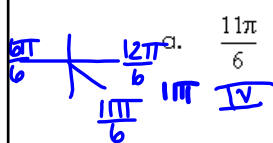
Dec 4-2:33 PM

1. Complete the chart below. Exact answers only, no decimals.

Function	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
sin	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	und.
csc	und.	2	$\sqrt{2}$	$\frac{2\sqrt{3}}{3}$	1
sec	1	$\frac{2\sqrt{3}}{3}$	$\sqrt{2}$	2	und.
cot	und.	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0

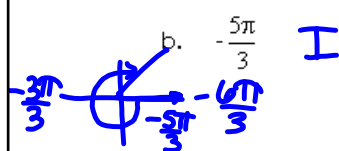


2. Find the value of all six trig functions for each below. Exact answers only. No decimals



$$\begin{aligned}\sin &= -\frac{1}{2} \\ \tan &= -\frac{\sqrt{3}}{3} \\ \csc &= -2\end{aligned}$$

$$\begin{aligned}\cos &= \frac{\sqrt{3}}{2} \\ \sec &= \frac{2\sqrt{3}}{3} \\ \cot &= -\sqrt{3}\end{aligned}$$



$$\begin{aligned}\sin &= \frac{1}{2} \\ \tan &= \frac{\sqrt{3}}{3} \\ \csc &= \frac{2\sqrt{3}}{3}\end{aligned}$$

$$\begin{aligned}\cos &= \frac{1}{2} \\ \sec &= 2 \\ \cot &= \frac{\sqrt{3}}{3}\end{aligned}$$

Dec 18-12:10 PM

$$\begin{aligned}2c. \quad & \sin \frac{4\pi}{3} \tan \frac{7\pi}{6} - \cos \frac{4\pi}{3} \sin \frac{7\pi}{6} \\ &= \left(-\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{3}}{3}\right) - \left(-\frac{1}{2}\right)\left(-\frac{1}{2}\right) \\ &= \left(-\frac{3}{6}\right)\frac{1}{2} - \left(\frac{1}{4}\right)\frac{3}{3} \\ &= -\frac{6}{12} - \frac{3}{12} = -\frac{9}{12} = \boxed{-\frac{3}{4}}\end{aligned}$$

Dec 10-9:35 PM

$$\cos \theta = \frac{3}{5}, \sin \theta = \frac{4}{5}, \tan \theta = \frac{4}{3}$$

x y

3. If the terminal side of an angle passes through the point $(-8, 10)$ find the csc, sec, and cot of the angle.

$$\csc \theta = \frac{2\sqrt{41}}{10} \Rightarrow \frac{\sqrt{41}}{5}$$

$$\sec \theta = \frac{2\sqrt{41}}{-8} \Rightarrow -\frac{\sqrt{41}}{4}$$

$$r = \sqrt{64 + 100} \Rightarrow 2\sqrt{41}$$

$$\cot \theta = \frac{-8}{10} \Rightarrow -\frac{4}{5}$$



4. If the terminal sides of an angle passes through the point $(1, -2)$ find the sin, cos, and tan of the angle.

$$\sin \theta = \frac{-2}{\sqrt{5}} \Rightarrow -\frac{2\sqrt{5}}{5}$$

$$\cos \theta = \frac{1}{\sqrt{5}} \Rightarrow \frac{\sqrt{5}}{5}$$

$$\tan \theta = -2$$

$$r = \sqrt{5}$$

5. Evaluate each of the following:

I

$$\text{a. } \csc \frac{7\pi}{3} = \frac{2\sqrt{3}}{3}$$

IV

$$\text{b. } \sec -\frac{\pi}{6} = \frac{2\sqrt{3}}{3}$$

I

$$\text{c. } \cot \frac{\pi}{4} = 1$$

I

$$\text{d. } \cos \frac{5\pi}{2} = 0$$

IV

$$\text{e. } \sin \frac{3\pi}{3} = \frac{-\sqrt{3}}{2}$$

$$\text{f. } \tan -\frac{\pi}{6} = \frac{-\sqrt{3}}{3}$$

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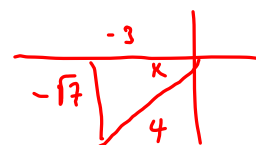
draw Δ 

6. Find the value of $\sec x$, $\sin x$, and $\cot x$ if $\cos x = -\frac{3}{4}$ for $\pi \leq x \leq \frac{3\pi}{2}$

$$\sec x = -\frac{4}{3}$$

$$\sin x = -\frac{\sqrt{7}}{4}$$

$$\cot x = \frac{3\sqrt{7}}{7}$$



7. Name the transformation that takes place from $y = \cos x$ to $y = -3\cos x + 2$.

cos
x-axis
Vertical Stretch of 3

8. Find the phase shift, period, and amplitude for $y = -2\cos\left(2x + \frac{\pi}{4}\right)$

$$\text{Amplitude} = 2$$

$$\text{Period} = \frac{2\pi}{2} = \pi$$

$$\text{phase shift} = -\frac{\pi}{4} \div 2 \Rightarrow -\frac{\pi}{4} \cdot \frac{1}{2} \Rightarrow -\frac{\pi}{8}$$

Dec 18-12:12 PM

9. Simplify each of the following:

$$a. \sin^2 x \cos x \tan x \csc x = \frac{\sin^2 x}{1} \cdot \frac{\cos x}{1} \cdot \frac{\sin x}{\cos x} \cdot \frac{1}{\sin x} \Rightarrow \sin^2 x$$

$$b. \cos x (\tan x - \sec x) = \cos x \left(\frac{\sin x}{\cos x} - \frac{1}{\cos x} \right) = \sin x - 1$$

10. Find the complement and supplement of $\frac{5\pi}{12}$

$$\text{Complement: } \frac{6\pi}{12} - \frac{5\pi}{12} \Rightarrow \frac{\pi}{12} \quad \text{Supplement: } \frac{12\pi}{12} - \frac{5\pi}{12} \Rightarrow \frac{7\pi}{12}$$

11. Find 2 coterminal angles for each of the following:

a. π

$$\pi + 2\pi = 3\pi$$

$$\pi - 2\pi = -\pi$$

b. $\frac{9\pi}{10}$

$$\frac{9\pi}{10} + \frac{20\pi}{10} = \frac{29\pi}{10}$$

$$\frac{9\pi}{10} - \frac{20\pi}{10} = \frac{-11\pi}{10}$$

c. $-\frac{5\pi}{3}$

$$-\frac{5\pi}{3} + \frac{6\pi}{3} = \frac{\pi}{3}$$

$$-\frac{5\pi}{3} - \frac{6\pi}{3} = \frac{-11\pi}{3}$$

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Graph each of the following on graph paper:

12. $y = 2\cos\frac{1}{2}x - 1$

Amp: 2
per: 4π
ps: 0
vs: -1

xsel $\frac{4\pi}{2} = \pi$

$$y = \cos x$$

1	0	-1	0	1
---	---	----	---	---

$$\begin{cases} x & A + D \\ x & 2 - 1 \end{cases}$$

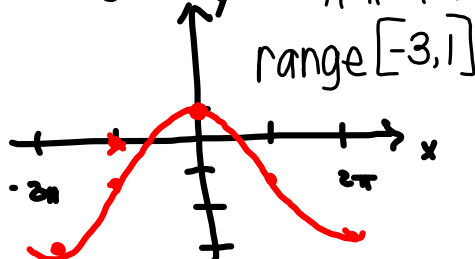
$$y = 2\cos\frac{1}{2}x - 1$$

1	-1	-3	-1	1
---	----	----	----	---

$$-2 \leq y \leq 2$$

$$-1 \quad -1$$

$$-3 \leq y \leq 1$$



13. $y = 3\sin 2x + 1$

Amp 3
per π
ps 0
vs 1

xsel $\frac{\pi}{2}$

$$y = \sin x$$

0	1	0	-1	0
---	---	---	----	---

$$\begin{cases} x & A + D \\ x & 3 + 1 \end{cases}$$

$$y = 3\sin(2x) + 1$$

1	4	1	-2	1
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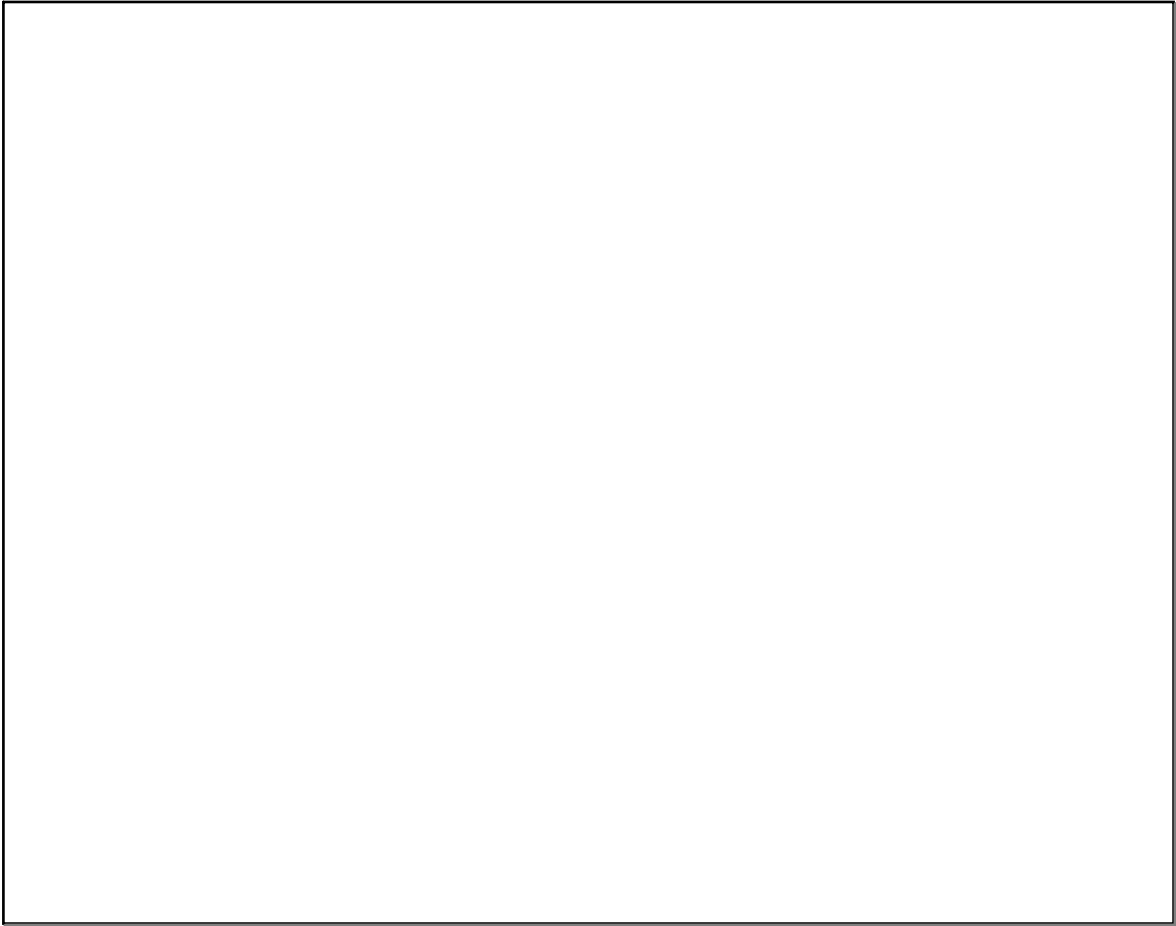
$$-3 \leq y \leq 3$$

$$+1 \quad +1$$

$$-2 \leq y \leq 4$$



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Jan 16-12:09 PM