

<p>GROUP NAME:</p> <p>Logo:</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Karley...</u></p>
<p>Date: _____</p> <p>Topics:</p>	<p>Writer/Prep: <u>Liene Spengler</u></p> <p>QC/Leader: _____</p>

Instructions:

#1

Prove the Identity

$$(1 - \sin^2 x) \csc^2 x = \cot^2 x$$

① ↓

$$(\cos^2 x) \csc^2 x = \cot^2 x$$

② → Pythagorean identity

$$\cos^2 x + \sin^2 x = 1$$

③ ↓


④ → Reciprocal identity

$$\frac{\cos^2 x}{\sin^2 x} = \cot^2 x = \text{③ Algebra}$$

⑤ ↓

$$\cot^2 x = \cot^2 x$$

⑥ Quotient

GROUP NAME: <i>I love Math</i>	Student Names (First and Last)
Logo: 	Speaker/Presenter: <u>Kevin Velazquez (Mr.)</u>
Date: <u>12-16-13</u>	Writer/Prep: <u>Kevin Velazquez (Myself)</u>
Topics:	QC/Leader: <u>Kevin Velazquez (I)</u>

Instructions:

TEST 3
#2

Complete the proof of the identity by choosing the Rule that justifies each step.

$$\begin{aligned}
 & \cancel{(1 - \sin^2 x)}^2 (1 - \sin^2 x) \csc x \\
 &= \cos^2 x \csc x - \text{Pythagorean} \\
 &= \cos^2 x \left(\frac{1}{\sin x} \right) - \text{Reciprocal} \\
 &= \cos x \left(\frac{\cos x}{\sin x} \right) - \text{Algebra} \\
 &= \cos x \cot x - \text{Quotient}
 \end{aligned}$$

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Date: _____	Writer/Prep: <u>S. [Signature]</u>
Topics:	QC/Leader: <u>S. [Signature]</u>

Instructions:

#3

Find amplitude, period, phase shift

$$y = -2 + 2 \cos\left(3x - \frac{\pi}{4}\right)$$

$$\begin{aligned} A &= 2 \\ B &= 3 \\ C &= -\pi/4 \\ D &= -2 \end{aligned}$$

Amplitude = $\boxed{2} = A$

Period = $\boxed{\frac{2\pi}{3}}$ $2\pi/B$

Phase Shift = $\frac{+\frac{\pi}{4}}{\frac{3}{1}}$ (3)

$\boxed{\frac{\pi}{12}}$ $-C/B$

Lowered ~~Phase~~ by -2 = D
Vertical

$$\frac{\pi}{4} \div \frac{3}{1}$$

$$\frac{\pi}{4} \times \frac{1}{3} = \frac{\pi}{12}$$

$$3\left(\frac{\pi}{12}\right) - \frac{\pi}{4} = 0$$

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Instructions:

Law of Sines

#4

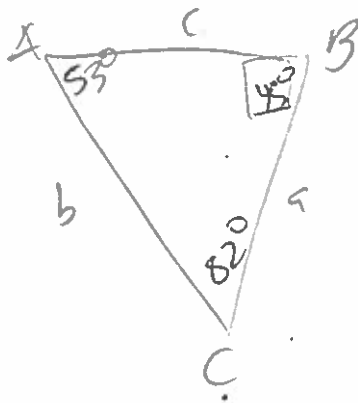
$A = 53^\circ$
 $B = 45^\circ$
 $C = 82^\circ$
 $a = 20.3$
 $b = 18$
 $c = 25.2$

$180^\circ - 53^\circ - 82^\circ = 45^\circ$

$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

$\frac{a}{\sin 53^\circ} = \frac{18}{\sin 45^\circ}$

$a = \frac{18 \sin 53^\circ}{\sin 45^\circ} = 20.3$



$\frac{18}{\sin 45^\circ} = \frac{c}{\sin 82^\circ}$

$\frac{18 \sin 82^\circ}{\sin 45^\circ} = c = 25.2$

<p>GROUP NAME:</p> <p>Logo: <u>I Love Math</u></p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Stan Kaplan</u></p>
<p>Date: _____</p>	<p>Writer/Prep: _____</p>
<p>Topics:</p>	<p>QC/Leader: _____</p>

Instructions: #5 Sol/Gab/toa

Let θ be an angle in quadrant III such that $\tan \theta = \frac{7}{2}$. Find the exact values of $\cos \theta$ and $\csc \theta$.

$\sqrt{7^2 + 2^2} = \sqrt{53} = \text{hypot side}$

* $\cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{-2}{\sqrt{53}}$

* $\csc \theta = \frac{\text{hyp}}{\text{opp}} = \frac{\sqrt{53}}{-7} = -\frac{\sqrt{53}}{7}$

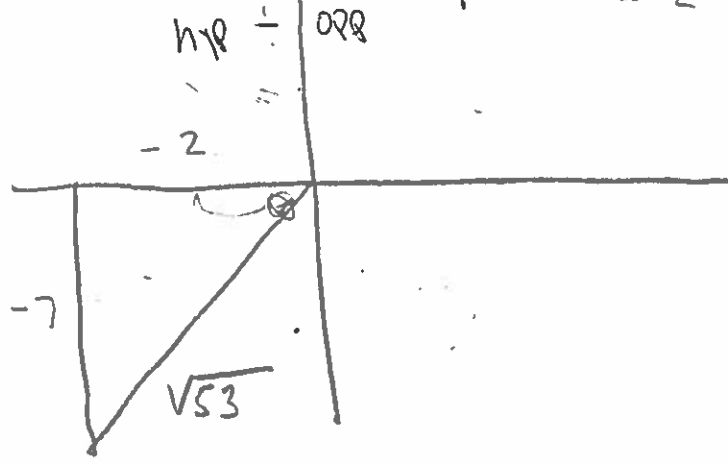
$\csc \theta = \frac{1}{\sin \theta}$


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

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

$= \frac{\cos \theta}{\sin \theta}$

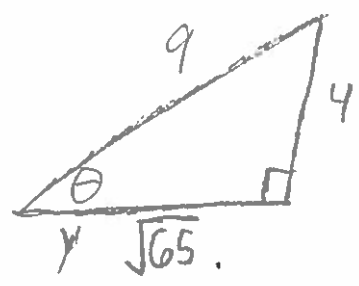
$= \frac{\text{adj}}{\text{opp}}$



<p>GROUP NAME: <u>Montana</u></p> <p>Logo: </p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Rachel</u></p>
<p>Date: _____</p> <p>Topics: _____</p>	<p>Writer/Prep: <u>Brandon Rivera</u></p> <p>QC/Leader: <u>Darshil Jaiswala</u></p>

Instructions:

Find $\cot \theta$, $\csc \theta$ and $\sin \theta$



$$4^2 + y^2 = 9^2$$

$$16 + y^2 = 81$$

$$-16$$

$$\sqrt{y^2} = \sqrt{65}$$

$$y = \sqrt{65}$$

$$\cot \theta = \frac{\text{Adj}}{\text{Opp}} = \frac{\sqrt{65}}{4}$$

$$\csc \theta = \frac{\text{Hyp}}{\text{Opp}} = \frac{9}{4}$$

$$\sin \theta = \frac{\text{Opp}}{\text{Hyp}} = \frac{4}{9}$$

(Handwritten scribbles)

GROUP NAME:	Student Names (First and Last)
Logo:	Speaker/Presenter: <u>TATIANA</u>
Date: _____	Writer/Prep: <u>DOMINIQUE</u>
Topics:	QC/Leader: <u>TREY</u>

Instructions:

#7

Law of
COSINES

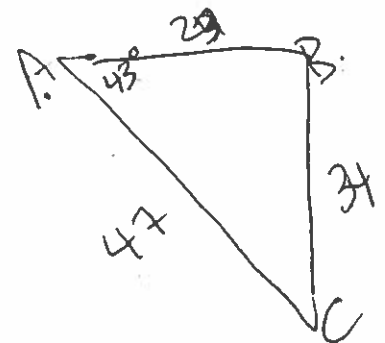
$a = 34$ $b = 47$ $c = 23$

$$a^2 = b^2 + c^2 - 2(bc)(\cos A)$$

$$34^2 = 47^2 + 23^2 - 2(47)(23)(\cos A)$$

$$1156 = 2738 - 2162(\cos A)$$

$$\begin{array}{r} -2738 \\ -2738 \end{array}$$



$$\frac{-1582}{-2162} = \frac{-2162(\cos A)}{-2162} \quad \text{inverse}$$

$$\cos^{-1}(.7317) \quad \boxed{A = 43.029}$$

$$b^2 = a^2 + c^2 - 2(ac)(\cos B)$$

$$47^2 = 34^2 + 23^2 - 2(34 \cdot 23)(\cos B)$$

$$2209 = 1156 + 529 - 1564$$

$$\begin{array}{r} 2209 \\ -1685 \\ -1685 \end{array}$$

$$\frac{524}{-1564} = \frac{-1564(\cos B)}{-1564}$$

$$\begin{array}{r} 524 \\ -1564 \end{array} = \frac{1564}{-1564} \quad \boxed{\cos(B) = 109^\circ} \cdot 57$$

$$109 + 43 = 152$$

$$180 - 152 = 28^\circ \quad \boxed{C = 28^\circ} \quad 27,456 \dots$$

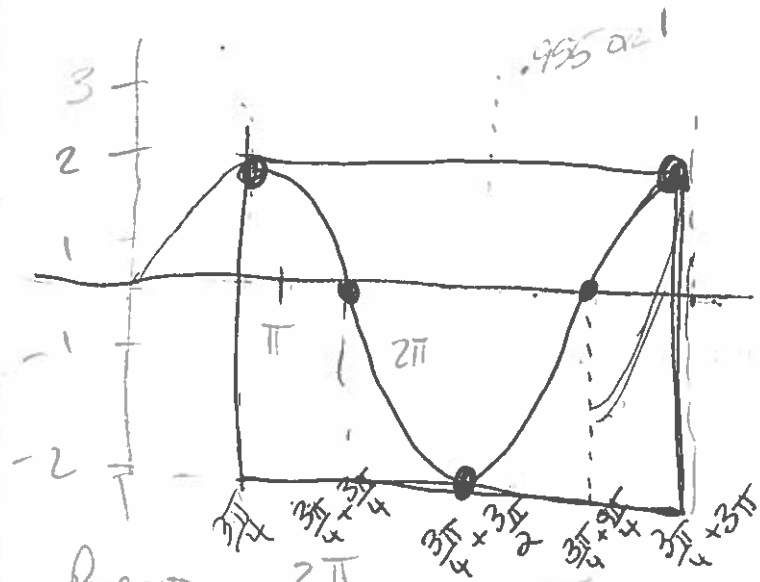
GROUP NAME:	Student Names (First and Last)
Logo:	Speaker/Presenter: _____
Date: <u>12-11-13</u>	Writer/Prep: <u>JIM KUKON</u>
Topics:	QC/Leader: _____

Instructions: #8

TEST #3

GRAPH THE FUNCTION $y = 2\cos\left(\frac{2}{3}x - \frac{\pi}{2}\right)$

$a = 2$
 $b = \frac{2}{3}$
 $c = -\frac{\pi}{2}$
 $d = 0$



PERIOD = $\frac{2\pi}{\frac{2}{3}} = 3\pi$
 $= 9.42$ or 1

$2\pi \div \frac{2}{3} = 3\pi$
 $2\pi \times \frac{3}{2} = 3\pi$

AMPLITUDE = $|2| = 2$

PHASE SHIFT = $\frac{c}{b} = \frac{-\frac{\pi}{2}}{\frac{2}{3}} = -\frac{3\pi}{4} = -2.4$

GROUP NAME:	Student Names (First and Last)
Logo:	Speaker/Presenter: <u>Danyan Zhou</u>
Date: _____	Writer/Prep: _____
Topics:	QC/Leader: _____

Instructions:

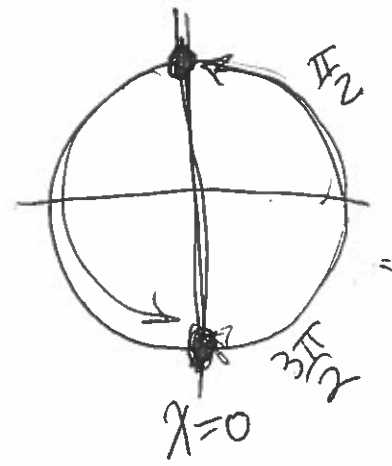
#9

Find all solutions of the equation in the interval $[0, 2\pi)$.
 $\cos \theta - 1 = -1$

$\cos \theta = -1 + 1 = 0$

$\theta = \frac{\pi}{2}, \frac{3\pi}{2} \because$

$\theta = \cos^{-1}(0) = 1.57 = \frac{\pi}{2}$



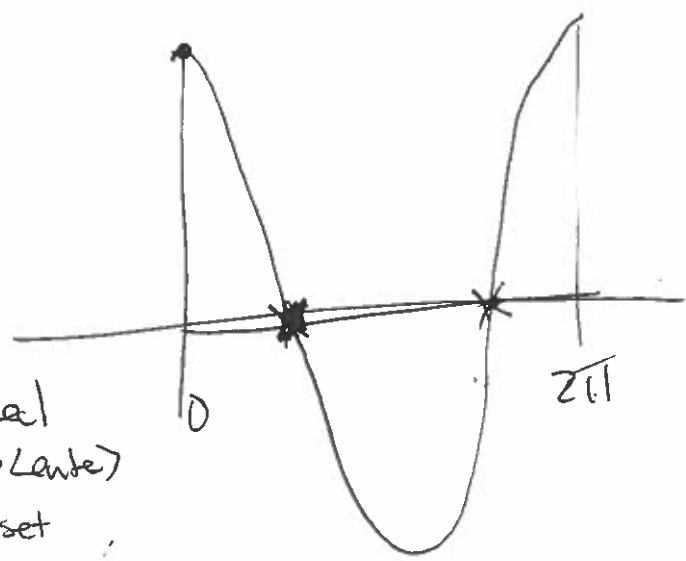
$y_1 = \cos$

$y_2 = 0$

$x_{min} = 0$

$x_{max} = 2\pi$

Zoomfit




Intersect
methe

Calc 5: Intesal
(ente) > (ente) > (ente)

calc 5: Inteset
> > (ente)

1.5π

<p>GROUP NAME: <u>ILM</u></p> <p>Logo: </p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Hiral Desai</u></p>
<p>Date: <u>22/11/13</u></p> <p>Topics: <u>TEST #3 Practice</u></p>	<p>Writer/Prep: <u>Hiral Desai</u></p> <p>QC/Leader: <u>Hiral Desai</u></p>

Instructions:

#10

$$A = \frac{4 - 0}{2} = 2$$

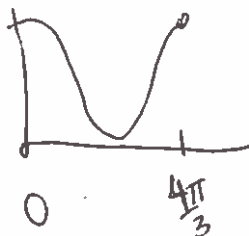
$$D = \frac{0 + 4}{2} = 2$$

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

$$\frac{4\pi}{3} = \frac{2\pi}{B}$$

$$B = \frac{2\pi \times 3}{4\pi}$$

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



Amplitude = $\frac{\text{max} - \text{min}}{2}$

D = $\frac{\text{min} + \text{max}}{2}$

P shift = $-\frac{C}{B}$

$$C = -(P \text{ shift})(B)$$

$$= -(-\frac{\pi}{3})(\frac{3}{2})$$

$$C = \frac{\pi}{2}$$

$$y = 2 \sin\left(\frac{3}{2}x + \frac{\pi}{2}\right) + 2$$



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Logo:	Speaker/Presenter: <u>Vinnie</u>
Date: _____	Writer/Prep: <u>Vinnie</u>
Topics:	QC/Leader: <u>VINNIE</u>

Instructions:

#11

Find the exact value of $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$.
 Write your answer in radians in terms of Radians of π

$$\sin^{-1}\left(-\sqrt{3}/2\right) = -1.04719755$$

now take this and Divide

$$\sin\left(-\frac{\pi}{3}\right) = -\frac{\sqrt{3}}{2}$$

$$-\frac{\pi}{3} = \sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$$

$$\boxed{-\frac{1}{3}(\pi)}$$

By π
 \uparrow

This equals

$$-\frac{1}{3} = -\frac{1}{3}$$

now times by

$$\pi \Rightarrow \frac{1}{3}(\pi)$$

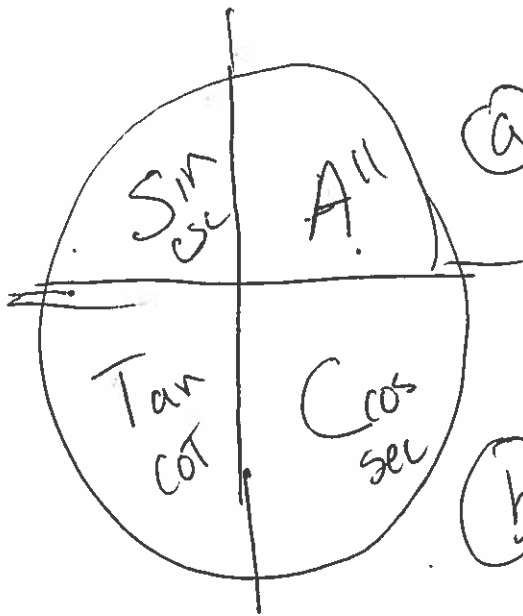
$$-60^\circ \times \frac{\pi}{180^\circ} = -\frac{\pi}{3}$$

Ans $\frac{\pi}{180}(\pi) =$ Radian answer?

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Date: _____	Writer/Prep: _____
Topics:	QC/Leader: _____

Instructions:

#12



(a)

$\sin \theta > 0$
 $\tan \theta > 0$

I and II
 I and III

(b)

$\cos > 0$
 $\sin < 0$

less than zero

I and IV
 III and IV

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Logo:	Speaker/Presenter: <u>Shanon Isoe</u>
Date: _____	Writer/Prep: <u>Onur Turkan</u>
Topics:	QC/Leader: _____

Instructions:

#13

stat data

x L1	y L2
15	130
25	115
35	130
45	145
55	130

stat calc \rightarrow \sin reg

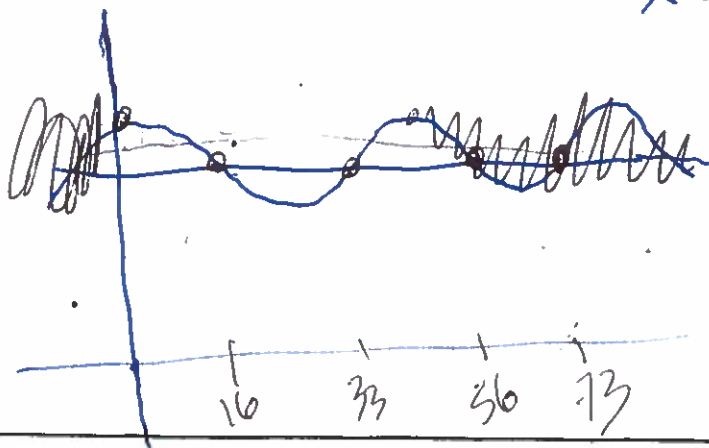
$$y = a \sin(bx + c) + d$$

$a = 15$
 $b = .1570$
 $c = .7853$
 $d = 130$

$$\text{Period} = \frac{2\pi}{B} \Rightarrow \frac{2\pi}{.1570} = 40.020$$

$$A = |15| \Rightarrow 15$$

$$\text{Phase shift} \rightarrow -\frac{c}{B} \Rightarrow -5.001$$



- $x = 73.085$
 16.91
 33.29
 56.70
 97.65

$$y = 125$$

$$= 125$$

Two Answers
Period

$$x = 16.91 + 40n$$

$$x = 33.29 + 40n$$

n integer

GROUP NAME:

Student Names (First and Last)

Logo:

Speaker/Presenter: LUCKY (GUD)

Date: 12/11/13

Writer/Prep: Natalie COFFIN

Topics:

QC/Leader: _____

Instructions:

Graph the Conic #14

$$\frac{(y-5)^2}{25} - \frac{(x+2)^2}{4} = 1$$

TOP
 center: $(-2, 5)$

vertices: $(-2, 0)$ $(-2, 10)$
 $(-4, 5)$ $(0, 5)$

$h + A, k = 5 + 5, -2 \rightarrow (-2, 10)$
 $h - A, k = 5 - 5, -2 \rightarrow (-2, 0)$
 $h, k + B = 5, -2 + -2 \rightarrow (-4, 5)$
 $h, k - B = 5, -2 + 2 = (0, 5)$

formulas Δ $\frac{(x-h)^2}{A^2} - \frac{(y-k)^2}{B^2} = 1$

Hyperbola $\begin{matrix} \text{)} \\ \text{or} \\ \text{(} \end{matrix}$

$y^2 + x^2$ Circle
 $x^2 - y^2$ hyperbola
 $3x^2 - y$ Parabola
 $\sqrt{2} + 3y^2$ Ellipse