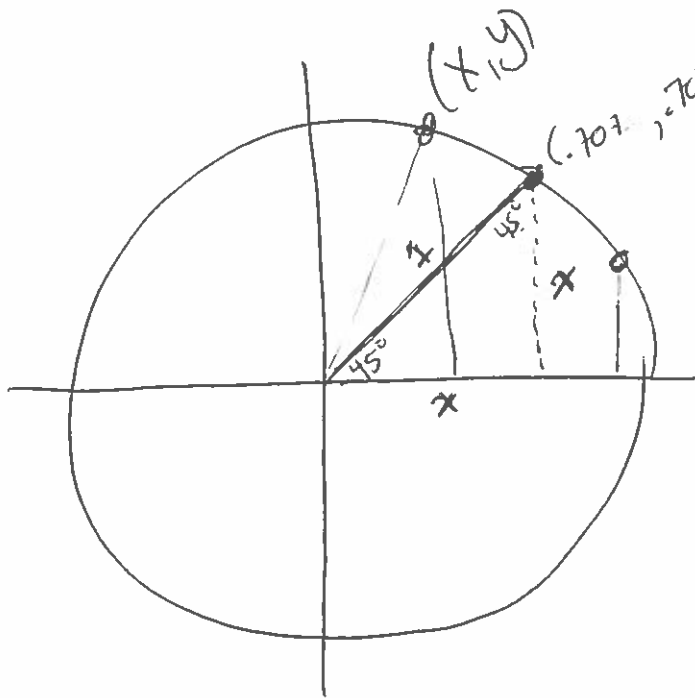


# TRIGONOMETRY (TRIG)



UNIT CIRCLE

$$x^2 + y^2 = 1$$

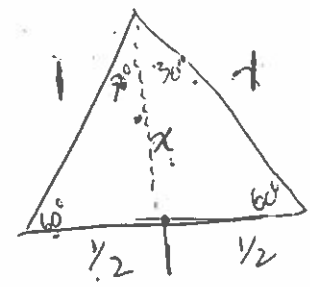
$$x^2 + x^2 = 1$$

$$2x^2 = 1$$

$$x^2 = 1/2$$

$$x = \sqrt{1/2} = 1/\sqrt{2} = \sqrt{2}/2 = .707$$

	0° or 0	30° $\pi/6$	45° $\pi/4$	60° $\pi/3$	90° $\pi/2$
x cos	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	$\frac{0}{2}$
y sin	$\frac{0}{2}$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
M tan "tangent"	0	$1/\sqrt{3}$	1	$\sqrt{3}$	UND



$$x^2 + (1/2)^2 = 1$$

$$x^2 + 1/4 = 1$$

$$x^2 = 3/4$$

$$x = \sqrt{3}/2$$

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

"cotangent"

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

"secant"

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

"cosecant"

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

$\tan(45^\circ)$   
(angle)

Ex

$$\cot(30^\circ) = 1 / \tan(30^\circ) = \sqrt{3} = 1.732...$$

$$\frac{\sqrt{2}}{2} = 0.707$$

$$\sqrt{2} = 1.414...$$

$$\sqrt{3} = 1.732$$

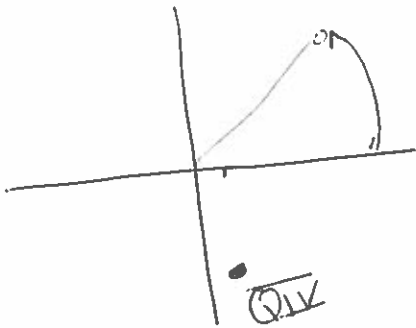
$$\frac{\sqrt{3}}{3} = 0.577...$$

$$\frac{1}{\sqrt{3}}$$

$$\sqrt{3}/2 = 0.866...$$

$$\cot(60^\circ) = 0.577... = \sqrt{3}/3$$

Coterminal



$$\begin{array}{r} 405^\circ - 360^\circ \\ -315^\circ + 360^\circ \\ 45^\circ \end{array}$$

$$\begin{array}{r} 1000^\circ \\ -360^\circ \\ -360^\circ \\ \hline 280^\circ \end{array}$$

$$w(280^\circ) = (\cos(280^\circ), \sin(280^\circ))$$

~~(0.174, -0.985)~~

$$(0.174, -0.985)$$

$$\frac{9\pi}{4} \text{ is coterminal with } \frac{\pi}{4} \quad \frac{9\pi}{4} - \frac{8\pi}{4} = \frac{\pi}{4}$$

$$\text{Subtract } 2\pi \text{ or } \frac{8\pi}{4}$$

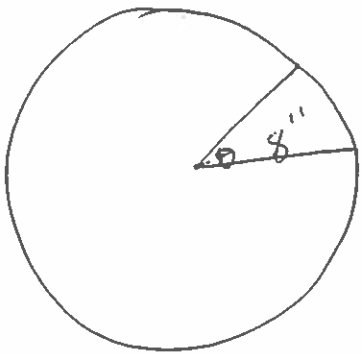
~~$\frac{9\pi}{4}$~~

$$-\frac{37\pi}{6} \text{ is coterminal with } \frac{\pi}{6}$$

$$+ 2\pi \text{ or } \frac{12\pi}{6}$$

$$\begin{array}{r} -\frac{37\pi}{6} \\ + \frac{12\pi}{6} \\ + \frac{12\pi}{6} \\ + \frac{12\pi}{6} \\ \hline -\frac{\pi}{6} \end{array}$$

$$r = \frac{16''}{2} = 8''$$



$$P = 2\pi \cdot r$$

$$2\pi \cdot 8$$

$$= 16\pi''$$

$$1 \text{ Slice} = 2\pi = 6.2''$$

UNIT -



$2\pi$

$\frac{\pi}{4}$

6.79..

$$S = r \cdot \theta$$

Arc length  
(or bore length)

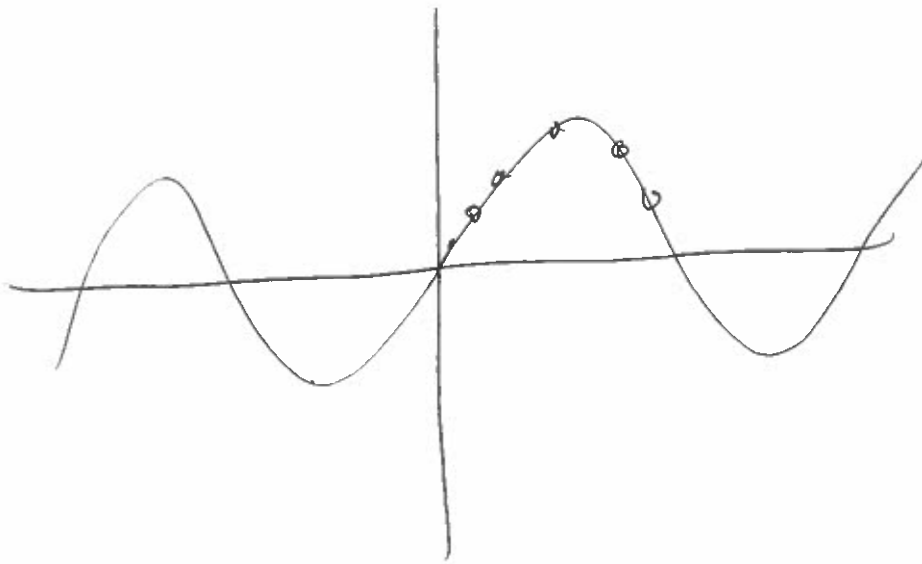
Angle in  
Radians


270° of 16" pizza

$$\theta = \frac{270^\circ}{180^\circ} \cdot \frac{\pi}{2} = \frac{3\pi}{2}$$

$$r = \frac{16}{2} = 8''$$

$$8 \times 3 \times \frac{\pi}{2} = 37.69''$$



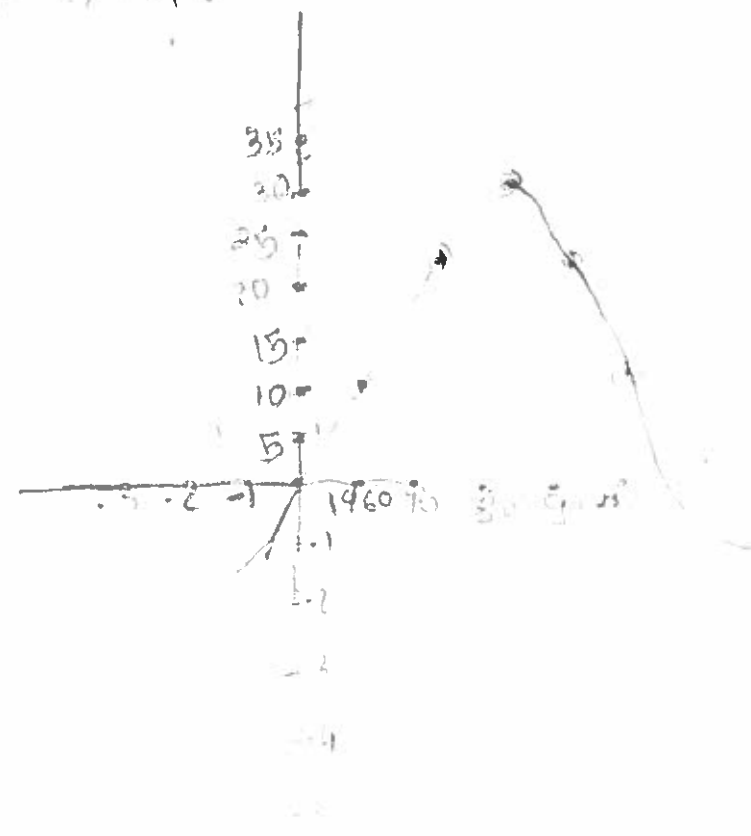
GROUP NAME: JL19.  
 Logo:   
 Date: \_\_\_\_\_  
 Topics: Sim day 2.7

Student Names (First and Last)  
 Speaker/Presenter: JONAS DOBSON  
 Writer/Prep: \_\_\_\_\_  
 QC/Leader: KEVIN VALARIN

Instructions:

cathechicals.  
 Solis part to work.

x	y
1960	10.4m
1970	21.8m
1980	32.5m
1990	20.2m
2000	11.1m

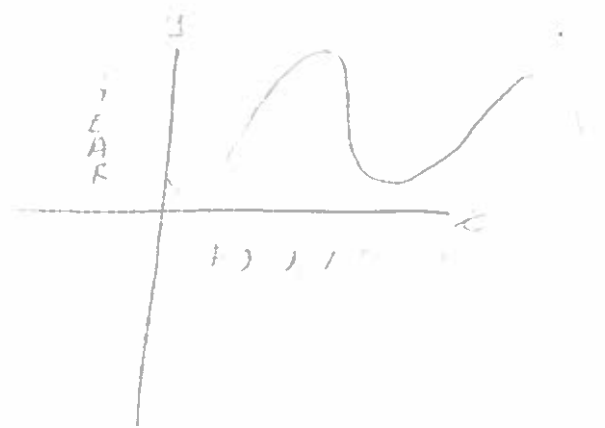


<p>GROUP NAME:</p> <p>Logo:</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: _____</p>
<p>Date: _____</p> <p>Topics: WERE WOLF POPULATION</p>	<p>Writer/Prep: LAUREN DODD</p> <p>QC/Leader: _____</p>

Instructions:

SINE REGRESSIONS

YEAR	# WOLVES
X	y
2010	300
2015	400
2020	300
2025	400
2030	300



IN THE YEAR 2100, THERE WILL BE 200 WOLVES  
 IN THE YEAR 2014, THERE WILL BE 367 WOLVES

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

$a = 100$   
 $b = 0.314\dots$   
 $c = 1.571\dots$   
 $d = 400$

$$y = (100, [300(0.314\dots x + 1.571\dots)]) + 400$$



GROUP NAME:	Student Names (First and Last)
Logo:	Speaker/Presenter: <u>Onur Turkan</u>
Date: <u>10/16/15</u>	Writer/Prep: <u>Avik Khareja</u>
Topics:	QC/Leader: <u>Sharon Lee</u>

Instructions:

$L_1$	$L_2$	$y$	Stocks & Years
0	1000		Share Value
2	720	$a = 35066.29$	
7	3000	$b = -1.92$	
8	530	$c = -1.79$	
9	4000	$d = 35011.54$	

Years | Stock Price (Guba Brand)

15 years 60216

2014 - 2015 = 2014



GROUP NAME:	Student Names (First and Last)
Logo: <u>BC</u>	Speaker/Presenter: <u>Stacy Kaplan</u>
Date: <u>7/16</u>	Writer/Prep: <u>Val Sinclair</u>
Topics:	QC/Leader: <u>Daryan Zhou</u>

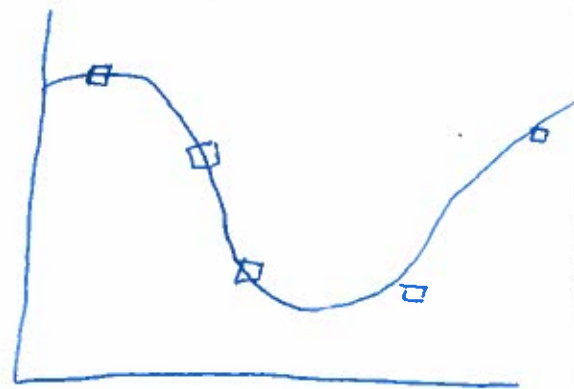
Instructions: sin regressions

STAT → EDIT

L1	L2
1	80
3	70
6	50
4	42
12	70

Graph

2000 → 9



Time of day and the Temp.

STAT → CALC → C: SinReg

$$Y = A \sin(Bx + C) + D$$

$$A = 14.39705825$$

$$B = .4760220719$$

$$C = 1.085648827$$

$$D = 60.50070724$$

At 4:00pm the temp will be  $63.43495^\circ$

<b>GROUP NAME:</b> <u>Amir</u> <b>Logo:</b> <u>[Handwritten Logo]</u>	<b>Student Names (First and Last)</b> <b>Speaker/Presenter:</b> <u>[Handwritten Name]</u>
<b>Date:</b> <u>10/16/15</u> <b>Topics:</b>	<b>Writer/Prep:</b> <u>[Handwritten Name]</u> <b>QC/Leader:</b> <u>[Handwritten Name]</u>

Instructions:

check - 441

(24) (24) 24

X	Y
2	2
3	1
4	6
5	4
8	4



500 beg

$$y = x^2 - 4x + 4 = 0$$

$$x = 2 \quad y = 0$$

$$10 = 1.7 \cdot 10^3 \cdot 4''$$

$$10 = 1.7 \cdot 10^3 \cdot 2 \cdot 0''$$

$$10 = 1.7 \cdot 10^3 \cdot 2^3 \cdot 7$$

500 10 10



<p>GROUP NAME:</p> <p>Logo:</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Dominique</u></p>
<p>Date: <u>10/10</u></p> <p>Topics:</p>	<p>Writer/Prep: <u>Tatiana C.</u></p> <p>QC/Leader: _____</p>

Instructions:

In 2014 there will be 70 million iPhones sold.

The graph is increasing, the

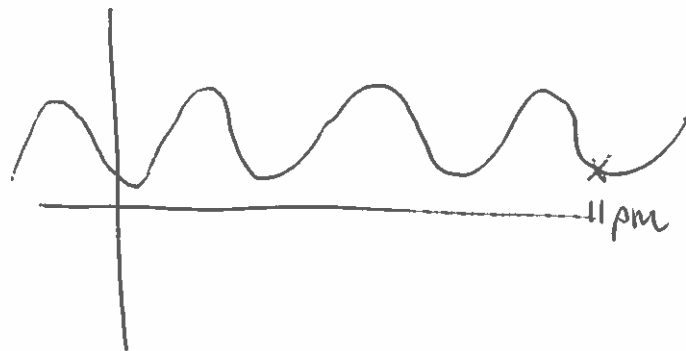


6  
 SunReg  
 $a = 40.37$   
 $b = -448$   
 $c = 2.459$

<p>GROUP NAME:</p> <p>Logo:</p>	<p>Student Names (First and Last)</p> <p>Speaker/Presenter: <u>Scott</u></p>
<p>Date: _____</p> <p>Topics:</p>	<p>Writer/Prep: <u>Rex</u></p> <p>QC/Leader: <u>Lucy Guo</u></p>

Instructions:

time	\$
8	300
9	2000
10	2300
11	4500
12	5670
13	5470
14	4500
15	12500
16	23000
17	2000



If we still open until 11 pm we can still make 1500\$