

Period: The length of one complete cycle

The graph of \sin/\cos oscillate about a horizontal line called Principal Axis.

Name _____

Date _____

Amplitude - Distance between Max and Min Principal Axis

Section 10.3

Assignment #14 Graphing Trig Functions

Make a table and graph the following:

- Make sure your calculator is in degree Mode
- Use your calculator to find the value of the following
- You might have to extend the given table to find the period
- Make a Graph. Degrees will go on the x axis.

1) $y = 2 + \sin\theta$

θ	Value
0	
90	
180	
270	
360	

2) $y = \sin(\theta - 180)$

θ	Value
0	
90	
180	
270	
360	

3) $y = 3 + 2\sin(\theta + 180)$

θ	Value
0	
90	
180	
270	
360	

9) $y = -3\cos\theta$

θ	Value
0	
90	
180	
270	
360	

10) $y = 2\cos\theta + 1$

θ	Value
0	
90	
180	
270	
360	

11) $y = \cos(2\theta)$

θ	Value
0	
90	
180	
270	
360	

12) $y = \sin\left(\frac{\theta}{2}\right) - 1$

θ	Value
0	
90	
180	
270	
360	

13) $y = -2\sin(3\theta)$

θ	Value
0	
90	
180	
270	
360	

- 1) Graph each problem
- 2) What is the period for each function?

(3)

$$y = a \sin(bx + c) + d \quad \text{or} \quad y = a \cos(bx + c) + d$$

$d > 0$ shift d units up

$d < 0$ shift $|d|$ units down

$\frac{c}{b} > 0$ shift $\frac{c}{b}$ units to left

$\frac{c}{b} < 0$ shift $\frac{c}{b}$ units to Right

$|a|$ is the Amplitude

$\frac{2\pi}{|b|}$ is the period or $\frac{360}{|b|}$

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

$A = 3$ shift 2 units up

$$\sin 90^\circ \cos \theta + \cos 90^\circ \sin \theta$$

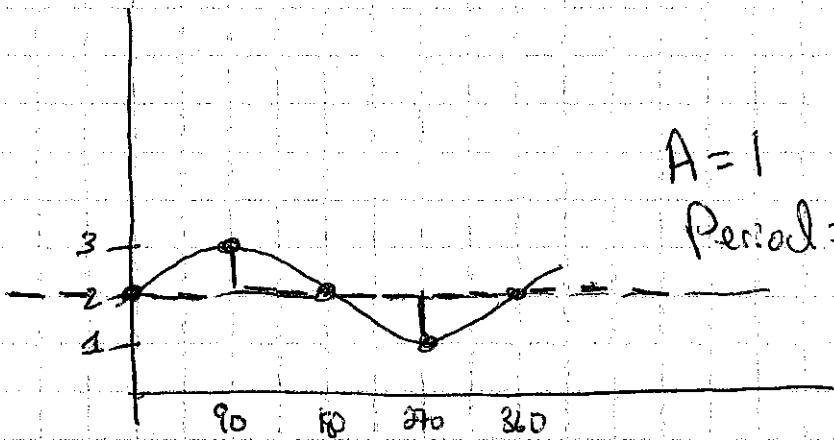
Ex $y = 3 \sin x$

$$3 \sin 2x$$

$$-2 + 3 \sin(2\theta)$$

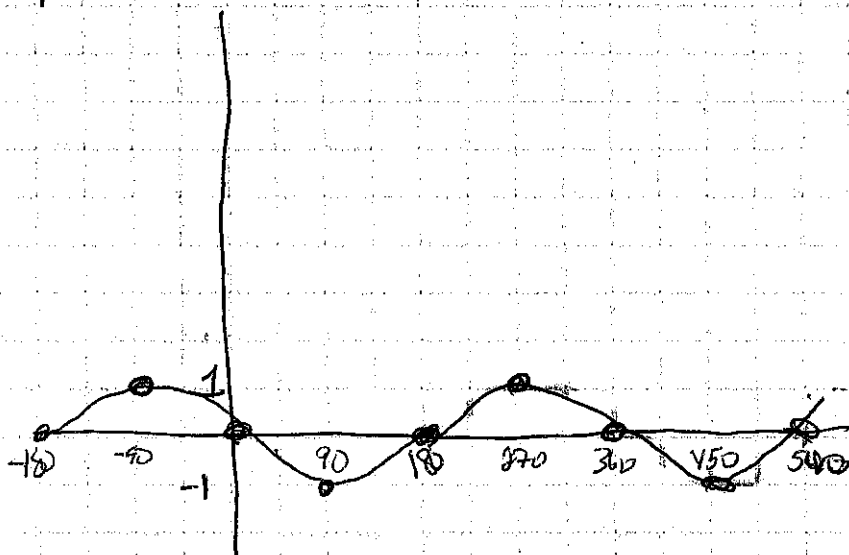
① $y = 2 + \sin \theta$

θ	Value
0	2
90	3
180	2
270	1
360	2



② $y = (\theta - 180)$

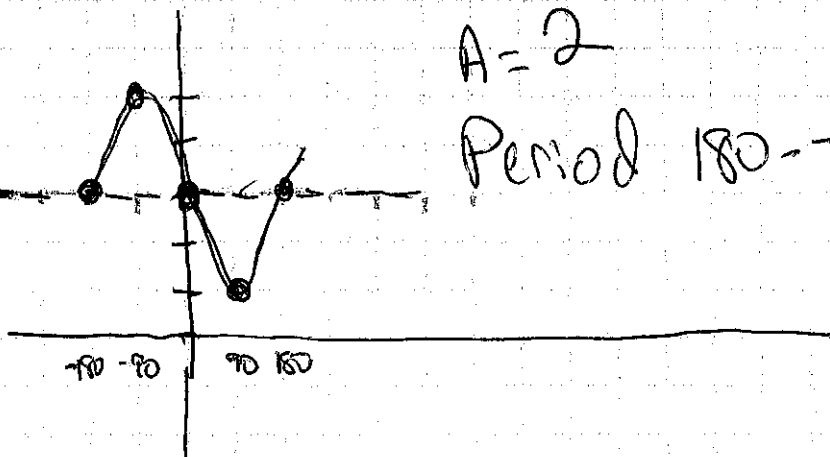
θ	Value
0	0
90	0
180	0
270	1
360	0
450	-1
540	0



A=1
period
 $540 - 180$
360

③ $y = 3 + 2 \sin(\theta + 180)$

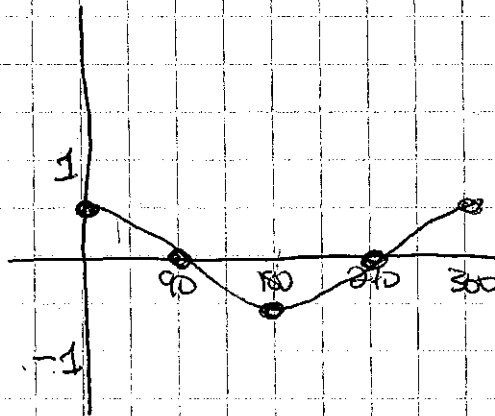
θ	Value
-180	3
-90	5
0	3
90	1
180	3



A=2
Period $180 - (-180) = 360$

④ $y = \frac{1}{2} \cos \theta$

θ	value
0	$\frac{1}{2}$
90	0
180	$-\frac{1}{2}$
270	0
360	$\frac{1}{2}$

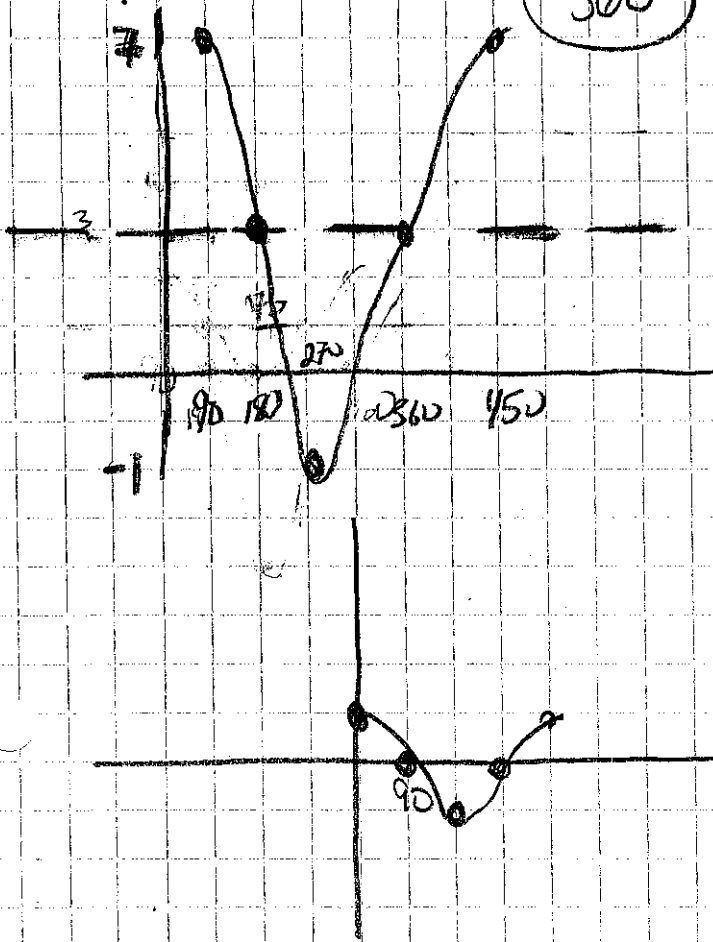


$A = \frac{1}{2}$
 Period = 360

⑤ $y = 3 + 4 \cos(\theta - 90)$

θ	value
90	7
180	3
270	-1
360	3
450	7

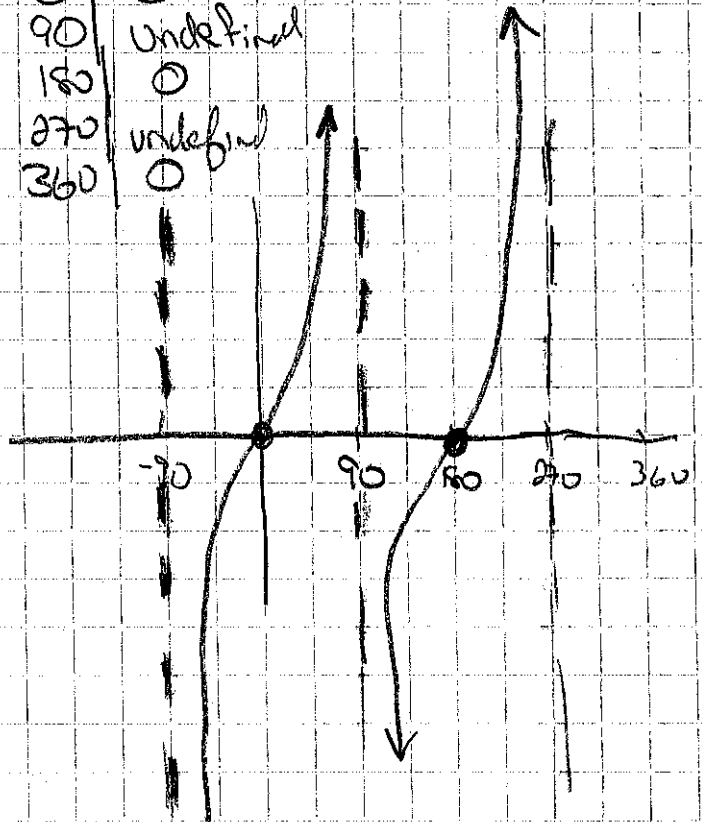
$A = 4$
 Period = 450 - 90
 360



⑥ $y = \tan \theta$

θ	value
0	0
90	undefined
180	0
270	undefined
360	0

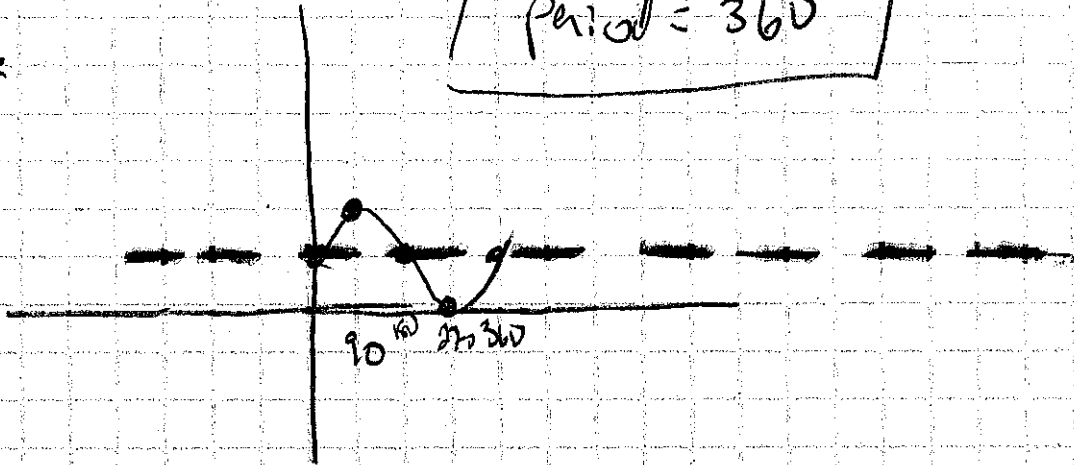
Period = 180



⑦ $y = \sin \theta + 1$

θ	Value
0	1
90	2
180	1
270	0
360	1

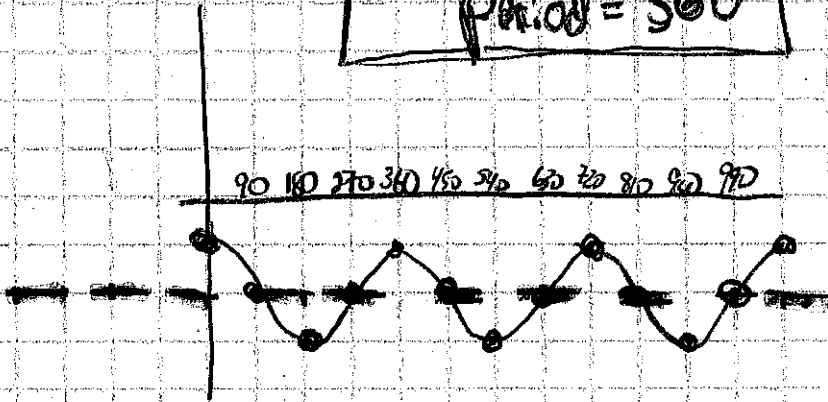
$A = 1$
 Period = 360



⑧ $y = \cos \theta - 2$

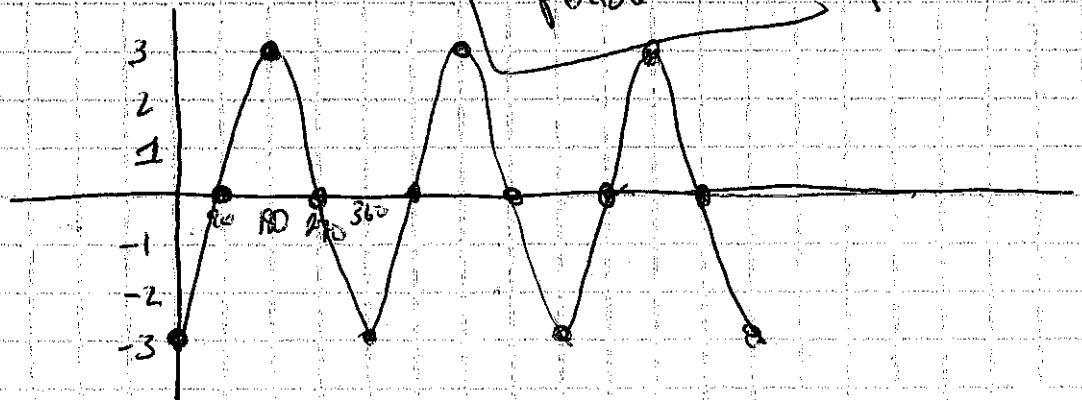
θ	Value
0	-1
90	-2
180	-3
270	-2
360	-1

$A = 1$
 Period = 360



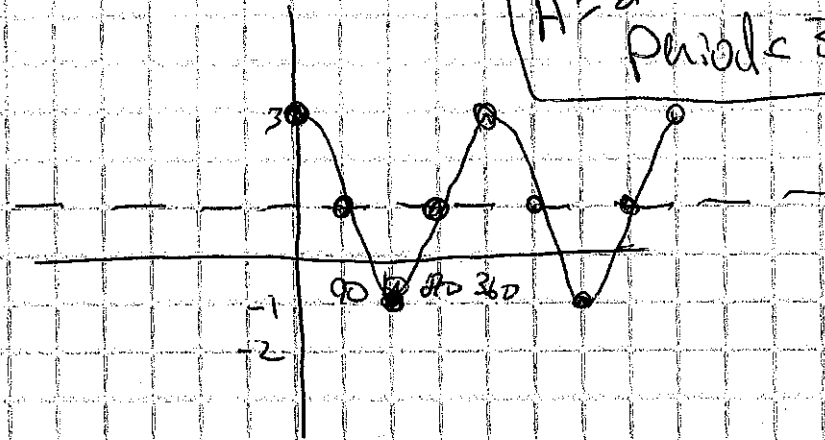
⑨ $y = -3 \cos \theta$

$A = 3$
 Period = 360



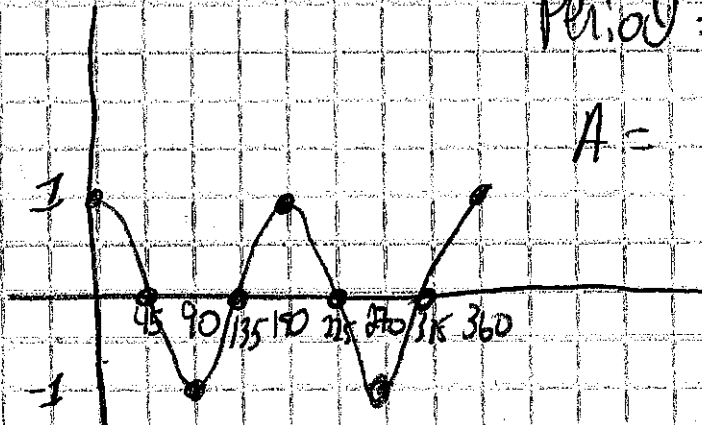
⑩ $y = 2\cos\theta + 1$

θ	Value
0	3
90	1
180	-1
270	1
360	3



⑪ $y = \cos(2\theta)$

θ	Value
0	1
45	0
90	-1
135	0
180	1



Period = $180^\circ = \frac{360}{2}$

A = 1