Pre-Calculus Academic
Sine/Cosine Graphing Review

Name: _____
Date: _____ **Pd.** _____

GRAPH EACH FUNCTION.

1. $y = \frac{1}{3} \cdot \sin 2\theta$

A = 1/3
B = 2
C = X
D = X

Period: π

Interval: π/4

Vertical Shift: none

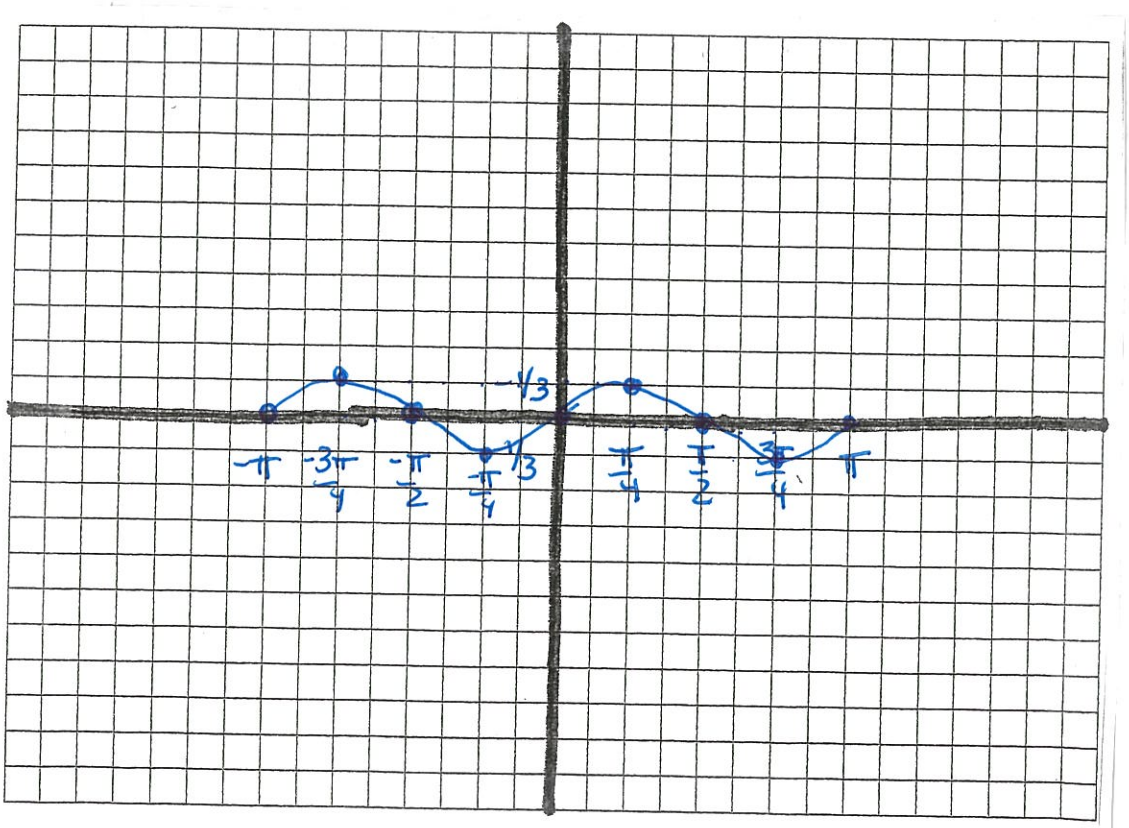
Phase Shift: none

X-Scale: none (only have a x-scale if you have a phase shift)

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

Interval = $\frac{\text{Period}}{4}$ = $\frac{\pi}{4}$

	θ	y	
	0	0	0
1/4	π/4	1/3	1
2/4	π/2	0	0
3/4	3π/4	-1/3	-1
4/4	π	0	0



2. $y = 3\sin\left(\frac{\theta}{6} + \frac{\pi}{3}\right) - 2$

$A = 3$
$B = 1/6$
$C = \pi/3$

Period: 12π

Interval: 3π

Vertical Shift: down 2

Phase Shift: 2π left

X-Scale: π

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

$= \frac{2\pi}{\frac{1}{6}} = \frac{2\pi}{1} \cdot \frac{6}{1} = 12\pi$

$\text{Interval} = \frac{\text{Period}}{4}$

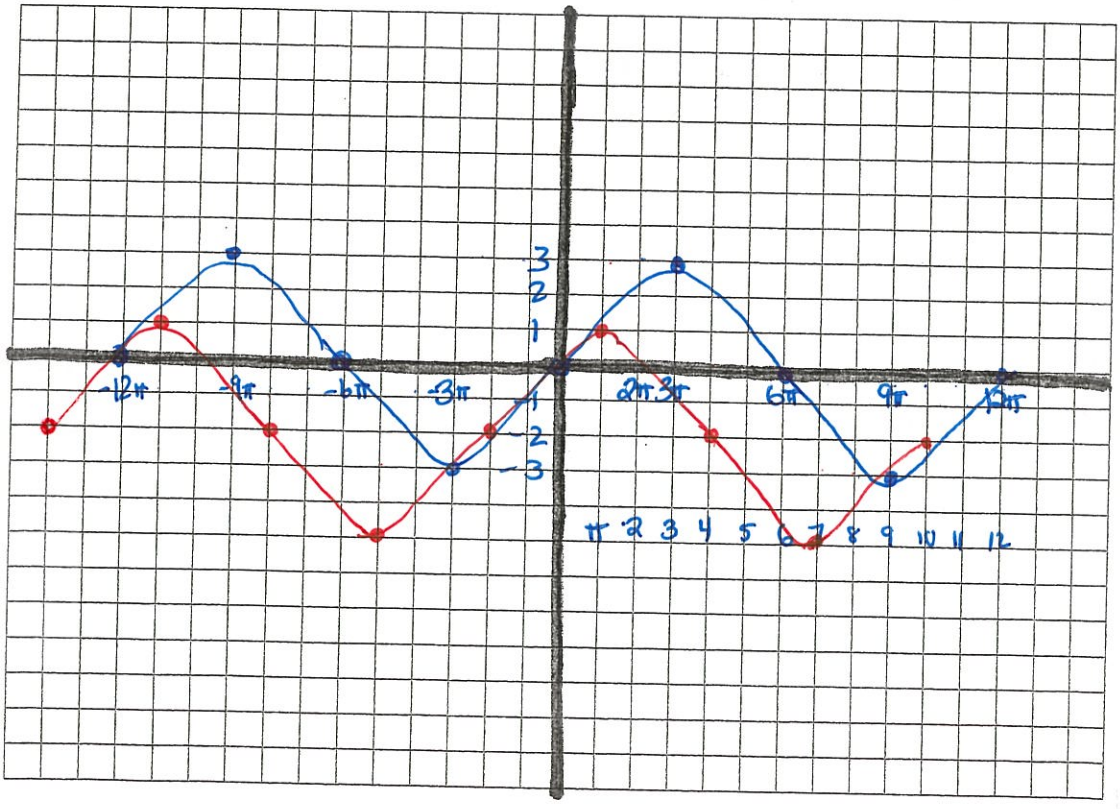
$= \frac{12\pi}{4}$

$= 3\pi$

$P.S. = \frac{C}{B}$

$= \frac{\frac{\pi}{3}}{\frac{1}{6}} = \frac{\pi}{3} \cdot \frac{6}{1} = \frac{6\pi}{3} = 2\pi$

θ	y	
0	0	0
3π	3	1
6π	0	0
9π	-3	-1
12π	0	0



move each point
- 2 left
- 2 down

EXAMINE THE GRAPH BELOW AND DETERMINE THE AMPLITUDE, PERIOD, PHASE SHIFT AND VERTICAL SHIFT USING COSINE OR SINE AS THE PARENT FUNCTION.

3.

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

$\frac{2\pi}{1} = \frac{2\pi}{B}$

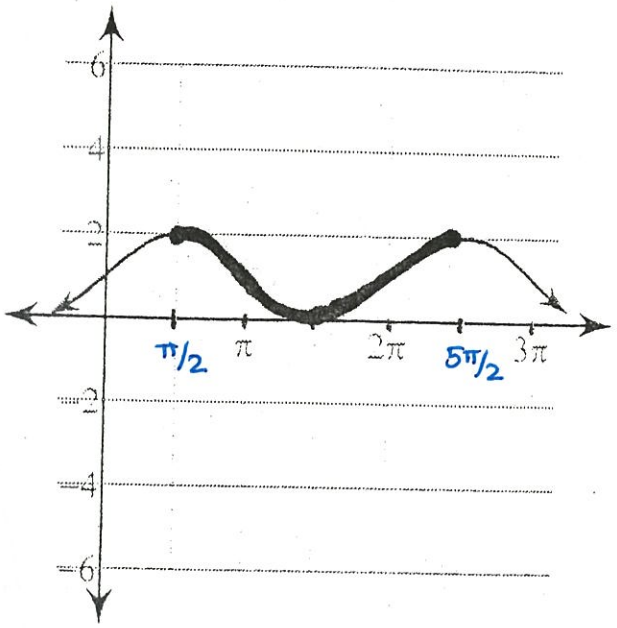
$\frac{2\pi \cdot B}{2\pi} = \frac{2\pi}{2\pi}$

$B = 1$

P.S. $= \frac{C}{B}$

$\frac{\pi}{2} = \frac{C}{1}$

$C = \pi/2$



Amplitude: 1 ($2/2$)

Period: 2π ($\frac{5\pi}{2} - \frac{\pi}{2} = \frac{4\pi}{2} = 2\pi$)

Phase Shift: $\pi/2$ right (starts @ $\pi/2$)

Vertical Shift: up 1

Function: $y = \cos(x - \pi/2) + 1$

$A = 1$
$B = 1$
$C = \pi/2$ right

$D =$ up 1

IDENTIFY THE AMPLITUDE, PERIOD, PHASE SHIFT AND VERTICAL SHIFT OF THE FOLLOWING TRIG FUNCTION.

4. $y = 8 - \sin\left(\frac{3x}{4}\right)$

$A = 1$
$B = 3/4$
$C =$ none
$D =$ up 8

Amplitude: 1

Period: $8\pi/3$

Phase Shift: none

Vertical Shift: up 8

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

$= \frac{2\pi}{\frac{3}{4}} = \frac{2\pi}{1} \cdot \frac{4}{3} = \frac{8\pi}{3}$

GIVEN THE FOLLOWING INFORMATION ABOUT THE TRIG FUNCTION, WRITE A POSSIBLE EQUATION.

5. Cosine Function

   Amplitude = 6

   Period = 2π

   Phase Shift = $-\frac{\pi}{2}$

$y =$ $6\cos(x - \pi/2)$

$A = 6$
$B = 1$
$C = -\pi/2$
$D = \text{none}$

$\text{Period} = \frac{2\pi}{B}$ ↓ $\frac{2\pi}{1} = \frac{2\pi}{B}$

$2\pi \cdot B = 2\pi$

$B = 1$

$\text{P.S.} = \frac{C}{B}$ ↓ $\frac{-\pi}{2} = \frac{C}{1}$

$C = -\pi/2$