

Graphing Trig Functions

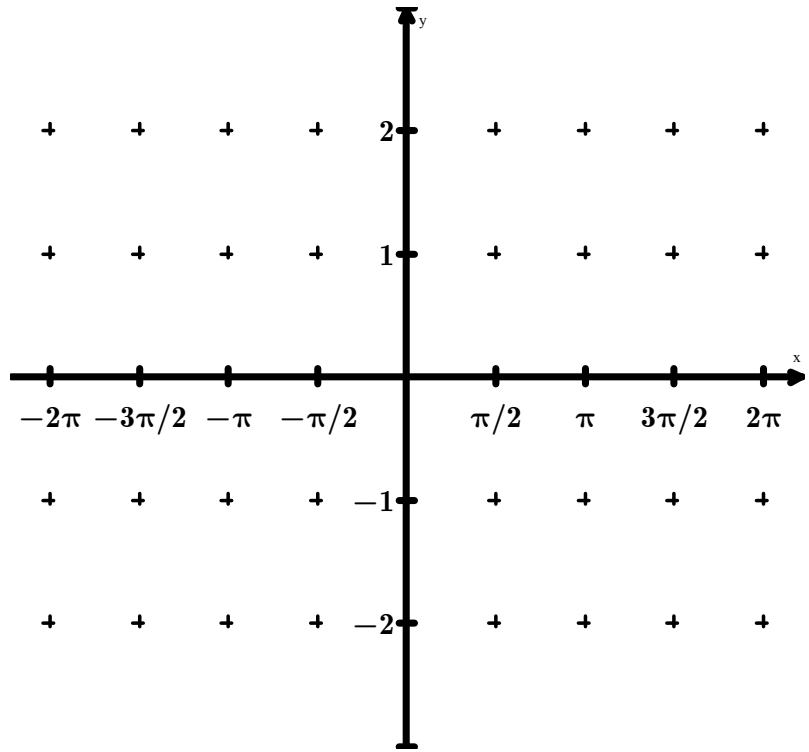
Name: _____

Date: _____ Block: _____

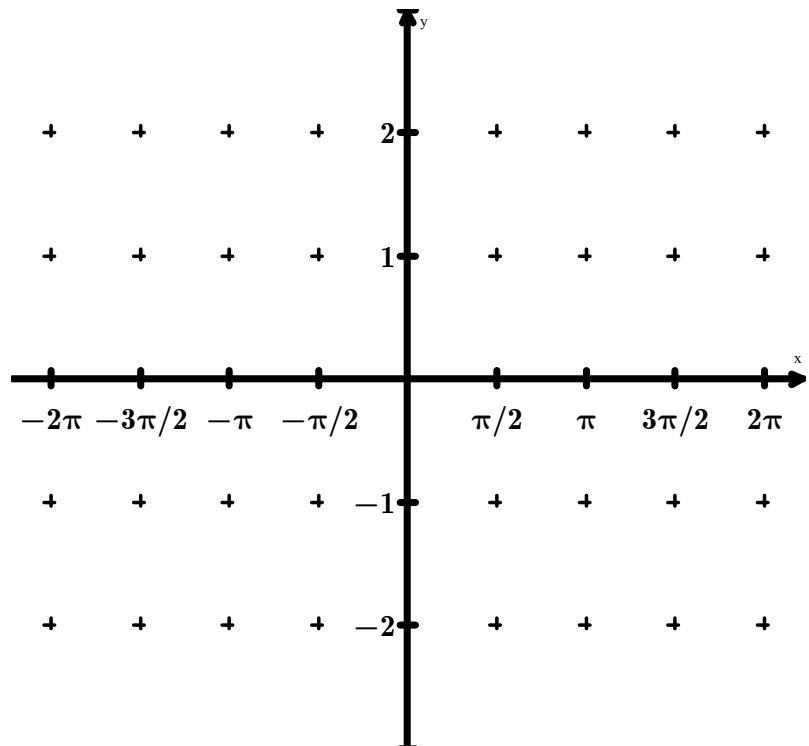
Mrs. Mistrion

Warm Up → Graph the following functions by plotting the points given on the table.

x	y = sin(x)
-2π	
$-\frac{3\pi}{2}$	
$-\pi$	
$-\frac{\pi}{2}$	
0	
$\frac{\pi}{2}$	
π	
$\frac{3\pi}{2}$	
2π	



x	y = sin(x)
-2π	
$-\frac{3\pi}{2}$	
$-\pi$	
$-\frac{\pi}{2}$	
0	
$\frac{\pi}{2}$	
π	
$\frac{3\pi}{2}$	
2π	



Graphing Sine and Cosine

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

$$y = a \cos(bx - c) + d$$

Amplitude = $|a|$ (how tall the graph is)

Period = $\frac{2\pi}{b}$ (how often the graph repeats)

Unit = $\frac{\text{Period}}{4}$ (what we count by on the x-axis)

Phase Shift is the value of x from $bx - c = 0$

(horizontal shift, side to side)

Vertical Shift = d

(up and down)

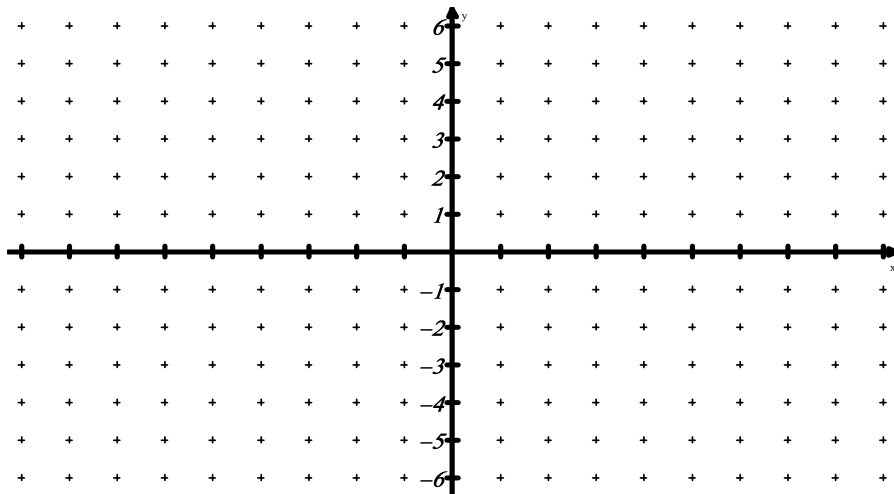
Reflection over x-axis if a is negative

Sine Wave: O-H-O-L-O

Cosine Wave: H-O-L-O

Example One → Graph the following trig functions

a) $y = 2\sin x - \pi - 1$



Amplitude: _____

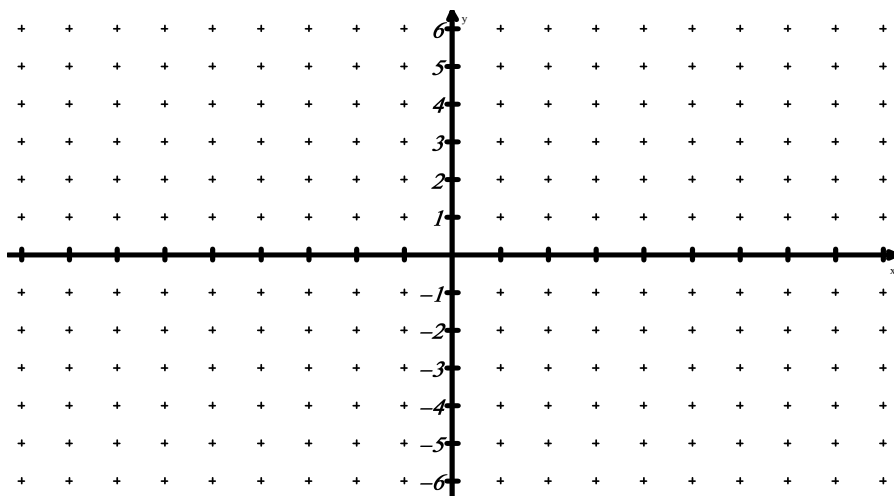
Period: _____

Unit: _____

Phase Shift: _____

Vertical Shift: _____

b) $y = -\sin 2x + \pi$



Amplitude: _____

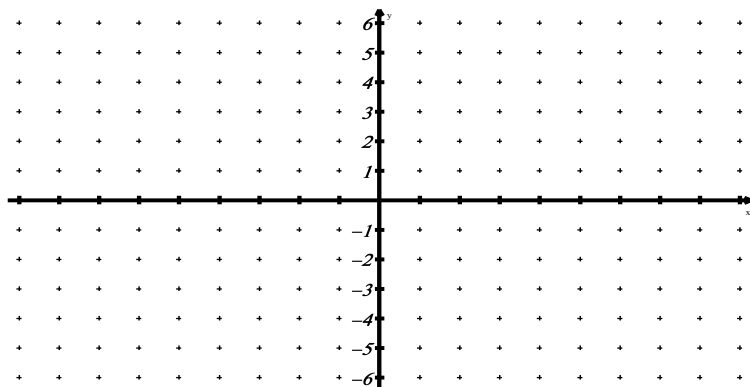
Period: _____

Unit: _____

Phase Shift: _____

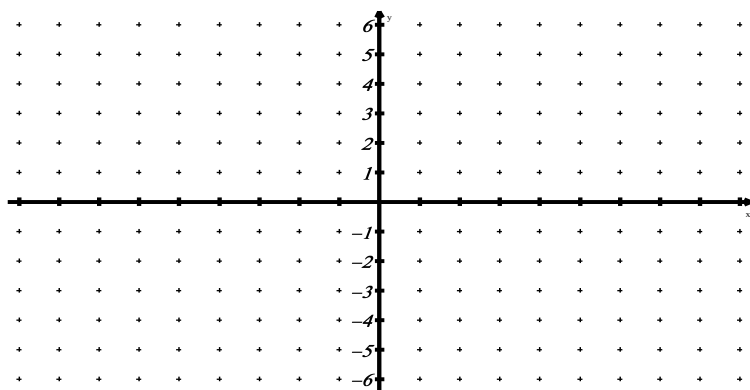
Vertical Shift: _____

c) $f(x) = 3\cos 3x + 4\pi + 1$



Amplitude: _____
 Period: _____
 Unit: _____
 Phase Shift: _____
 Vertical Shift: _____

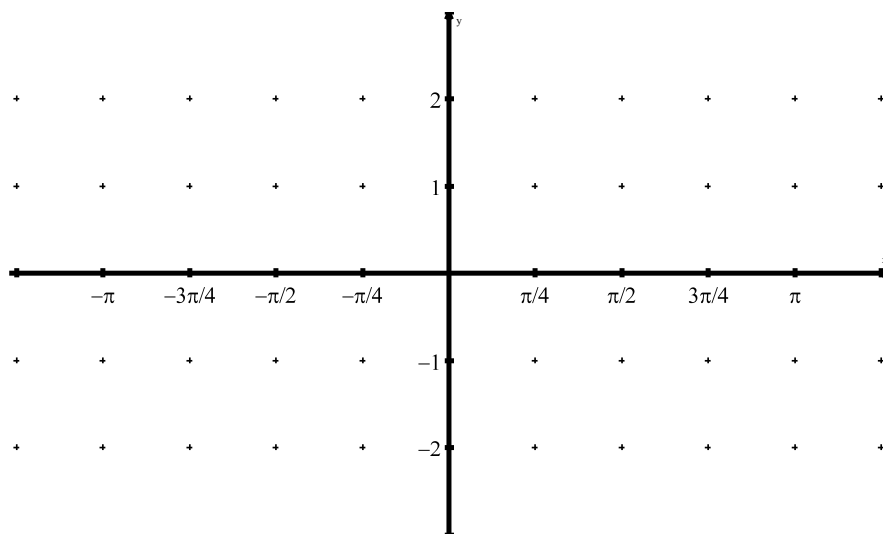
d) $y = -2\cos x - 1$



Amplitude: _____
 Period: _____
 Unit: _____
 Phase Shift: _____
 Vertical Shift: _____

Graphing Tangent

x	y = tan(x)
$-\pi$	
$-\frac{3\pi}{4}$	
$-\frac{\pi}{2}$	
$-\frac{\pi}{4}$	
0	
$\frac{\pi}{4}$	
$\frac{\pi}{2}$	
$\frac{3\pi}{4}$	
π	



Tangent

$$y = a \tan(bx - c) + d$$

$$\text{Amplitude} = |a|$$

(how tall the graph is)

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

(how often the graph repeats)

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

(what we count by on the x - axis)

Phase Shift is the value of x from $bx - c = 0$

(horizontal shift, side to side)

Vertical Shift = d

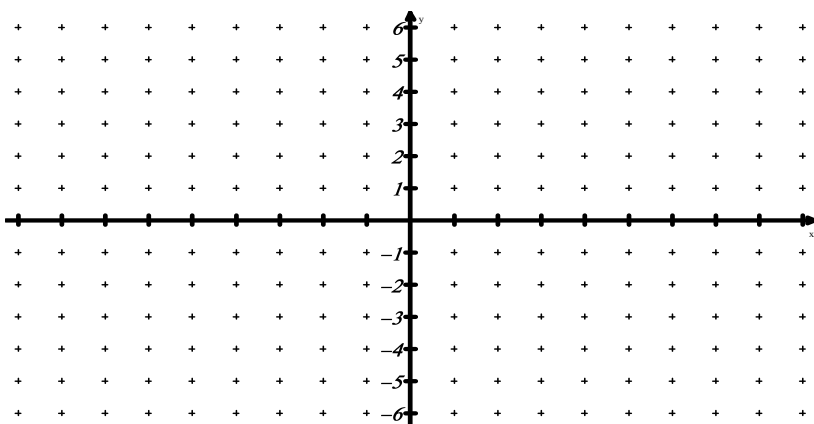
(up and down)

Reflection over x - axis if a is negative

Tangent Curve: O-H-U-L-O

EXAMPLE TWO → Graph the following functions

a) $g(x) = 2 \tan(4x - \pi) + 3$



Amplitude: _____

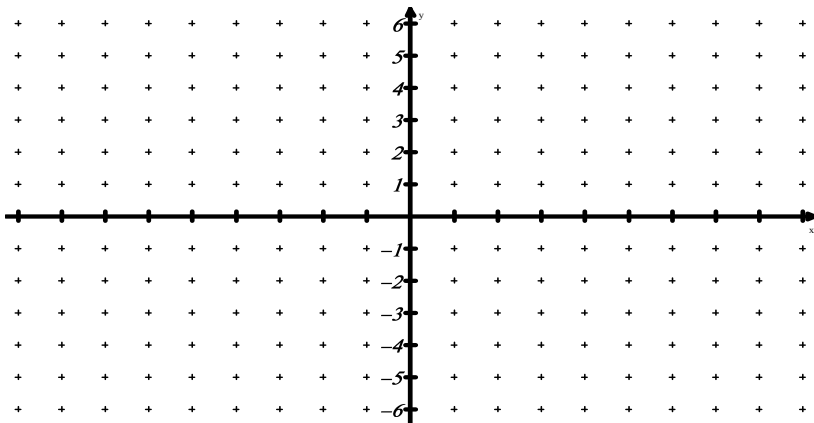
Period: _____

Unit: _____

Phase Shift: _____

Vertical Shift: _____

b) $y = -3 \tan(x - \pi)$



Amplitude: _____

Period: _____

Unit: _____

Phase Shift: _____

Vertical Shift: _____

EXAMPLE THREE → Which equations are graphed below?

