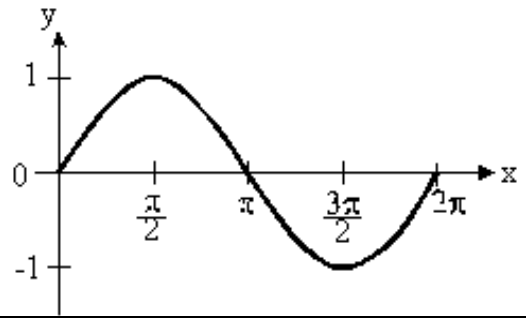
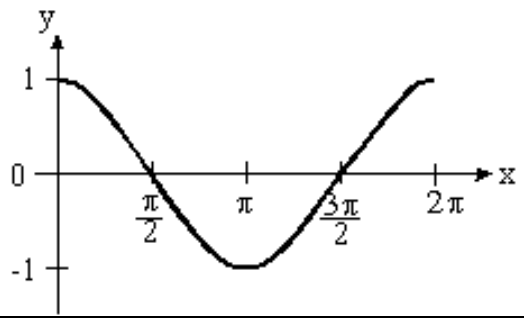
Use your knowledge of transformations to graph each of the following trigonometric functions. One period of the sine and cosine function are graphed below. Identify which one is which and use the **"important values"** as you translate each graph in questions #1-10.



y =



y =

The "**important values**" are where the **peaks, valleys and intercepts** occur. The peaks and valleys are your **relative extrema**. For the sine and cosine function, these values happen every _____ radians.

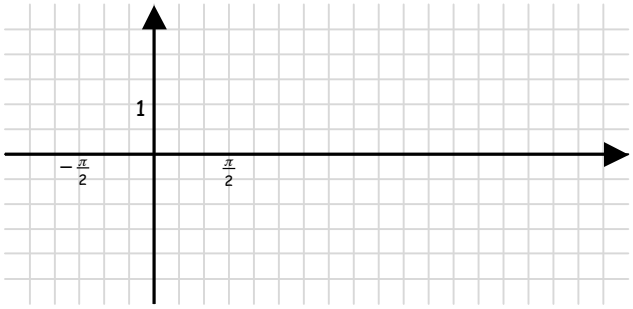
The general equations for the sinusoidal functions are:

$$y = a\sin\left(bx - c\right) + d \quad \text{and} \quad y = a\cos\left(bx - c\right) + d$$

$\lvert a \rvert$ is the	$\frac{2\pi}{b}$ is the	$\frac{c}{b}$ is the	d is the
_____	_____	_____	_____

Graph each of the following functions. Be sure to include all relative extrema and intercepts. Include at least ONE period for each function. List the amplitude and the period for each function. Use the indicated scale.

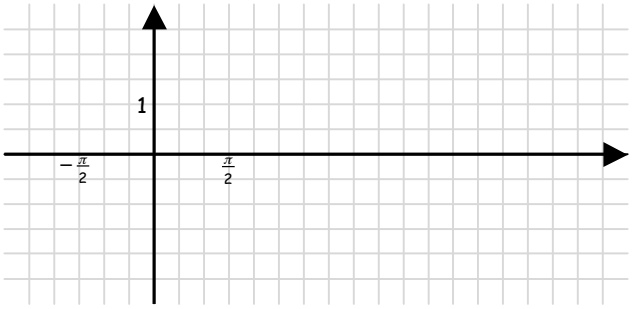
1. y = -sin x



Amplitude: Period:

Phase Shift: "Important Values":

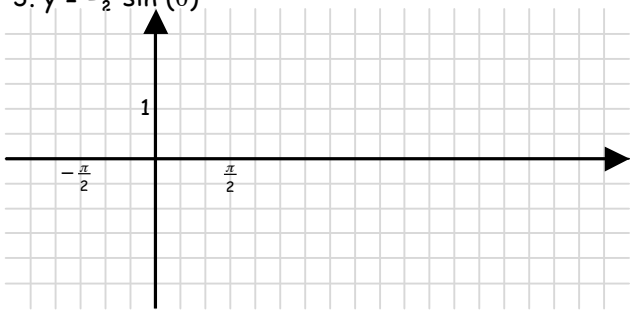
2. y = 2 cos θ



Amplitude: Period:

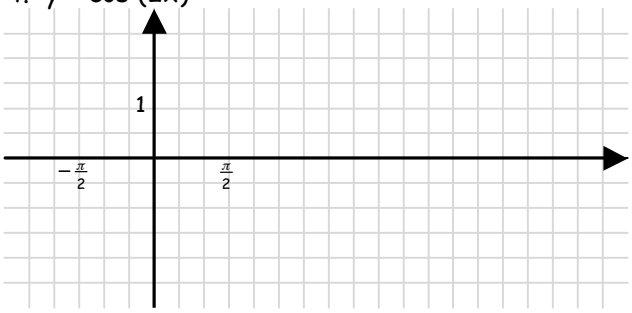
Phase Shift: "Important Values":

3. $y = -\frac{1}{2}\sin(\theta)$



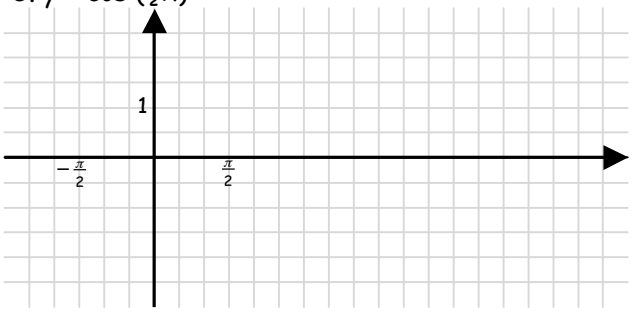
Amplitude: Period:
Phase Shift: "Important Values":

4. $y = \cos(2x)$



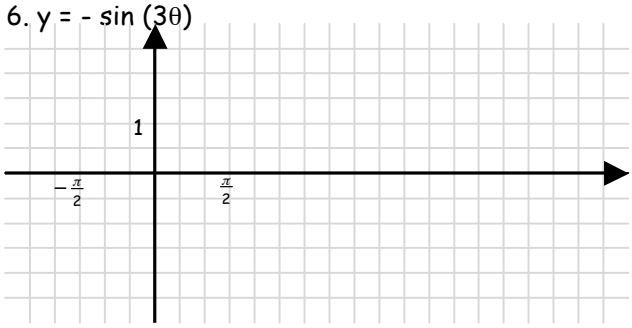
Amplitude: Period:
Phase Shift: "Important Values":

5. $y = \cos(\frac{1}{2}x)$



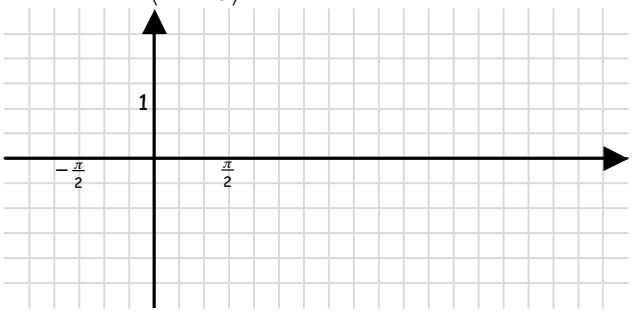
Amplitude: Period:
Phase Shift: "Important Values":

6. $y = -\sin(3\theta)$



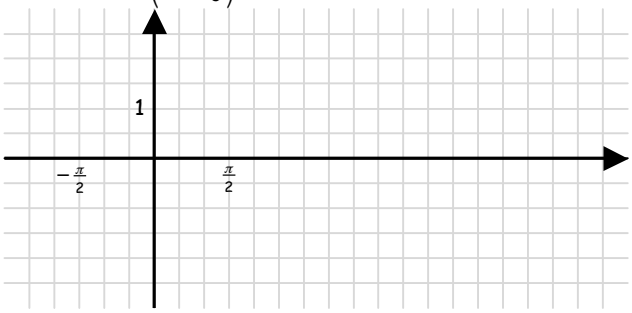
Amplitude: Period:
Phase Shift: "Important Values":

7. $y = \sin\left(x - \frac{\pi}{6}\right)$



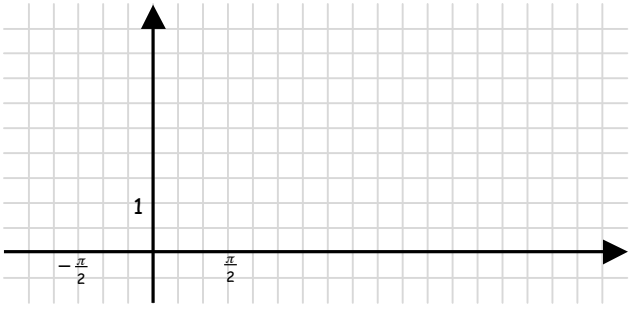
Amplitude: Period:
Phase Shift: "Important Values":

8. $y = \cos\left(\theta + \frac{\pi}{3}\right)$



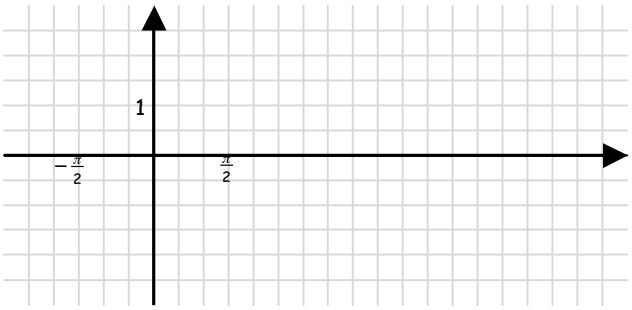
Amplitude: Period:
Phase Shift: "Important Values":

9. $y = 2\cos\left(\theta\right) + 2$



Amplitude: Period:
Phase Shift: Vertical Shift:
"Important Values":

10. $y = -\sin\left(x\right) - 1$



Amplitude: Period:
Phase Shift: Vertical Shift:
"Important Values":