

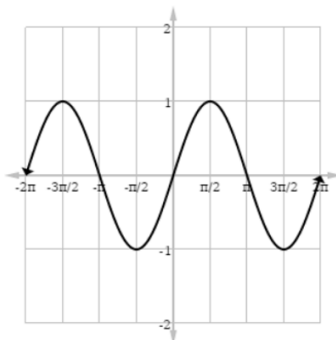
# Review

## SM3 Review Graphing and Modeling Sine and Cosine (shorter)

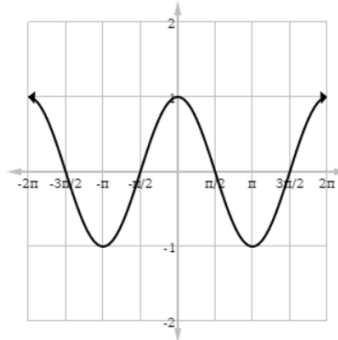
Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

### Graphing Sine and Cosine Functions – Review

$$y = \sin(x)$$



$$y = \cos(x)$$



\*\*Remember – For  $y = a \sin(b\theta - c) + d$   
 $y = a \cos(b\theta - c) + d$

- $|a|$  gives you the **amplitude** of your graph. If 'a' is negative, you will have a reflection across the x-axis.
- $b$  will help give you the **period** of your graph. The period will be  $\frac{2\pi}{b}$ .
- $c$  will give you the **phase shift** of your graph (left or right). \*remember it's the opposite inside parentheses.
- $d$  will give you the **vertical shift** of your graph (up or down). \*this is also the midline.

Fill in the blanks for each equation.

1.  $f(\theta) = -5 \cos\left(\frac{1}{4}(\theta)\right) + 6$

Vertical Shift (k): \_\_\_\_\_

Amplitude (a): \_\_\_\_\_

Phase Shift (h): \_\_\_\_\_

b: \_\_\_\_\_

Period: \_\_\_\_\_

2.  $f(\theta) = -\sin\left(\theta + \frac{\pi}{4}\right)$

Vertical Shift (k): \_\_\_\_\_

Amplitude (a): \_\_\_\_\_

Phase Shift (h): \_\_\_\_\_

b: \_\_\_\_\_

Period: \_\_\_\_\_

Fill in the vertical shift, amplitude, phase shift, and period. Then graph at least 1 period or cycle. Label 5 key points or make a table of the key points.

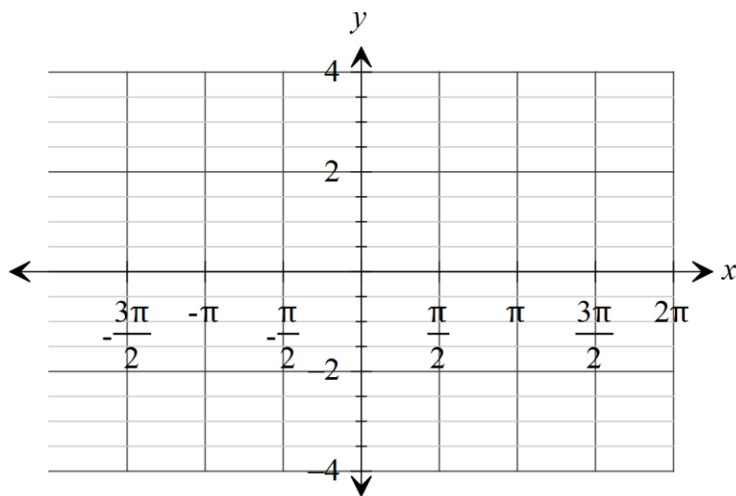
3.  $f(\theta) = 3 \cos 2\left(\theta + \frac{\pi}{2}\right) - 1$

Vertical Shift (k): \_\_\_\_\_

Amplitude (a): \_\_\_\_\_

Phase Shift (h): \_\_\_\_\_

Period: \_\_\_\_\_



$\theta$					
$y = \cos \theta$					

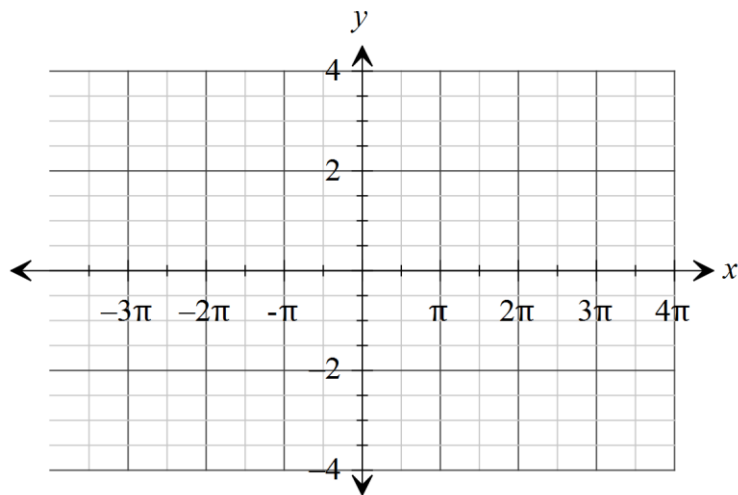
4.  $f(\theta) = 2 \cos 3(\theta - \pi)$

Vertical Shift (k): \_\_\_\_\_

Amplitude (a): \_\_\_\_\_

Phase Shift (h): \_\_\_\_\_

Period: \_\_\_\_\_



$\theta$					
$y = \cos \theta$					

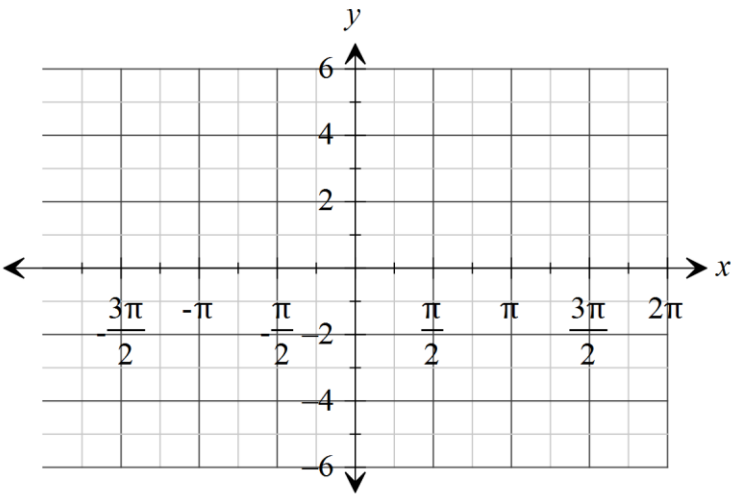
5.  $f(\theta) = -3 \sin(\theta) + 2$

Vertical Shift (k): \_\_\_\_\_

Amplitude (a): \_\_\_\_\_

Phase Shift (h): \_\_\_\_\_

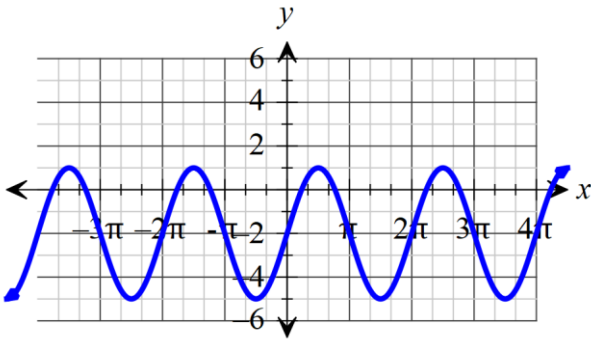
Period: \_\_\_\_\_



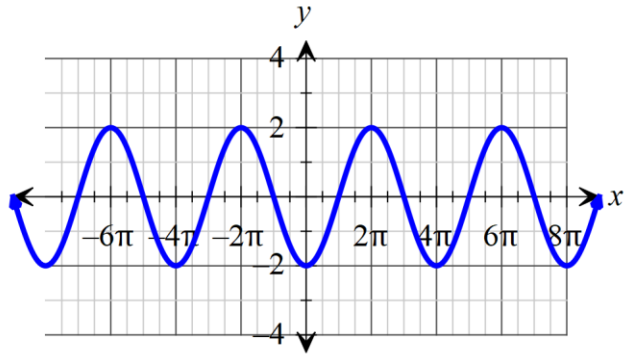
$\theta$					
$y = \sin \theta$					

Write the sine or cosine equation to represent each graph.

6.  $\sin(\theta)$



7.  $\cos(\theta)$



Write the **cosine** equation that has the given information.

8. Amplitude = 2, Period =  $2\pi$ , Vertical Shift = 24

9. Amplitude = 1, Phase Shift =  $\pi$  Period =  $\frac{\pi}{2}$

Write the **sine** equation that has the given information.

10. Amplitude = 3, Period =  $\pi$ , Vertical Shift = 10

11. Amplitude = 7, Phase Shift = 0 Period =  $\frac{\pi}{4}$