

# Graphing Sine Demonstration Activity

- 1) Open the Graphing Sine Demonstration located at <http://demonstrations.wolfram.com/IllustratingSineWithTheUnitCircle/>
- 2) First get familiar with the various options. Adjust the slider for the angle. Click the show value box. You can animate the demonstration by clicking on the square with a plus sign and pressing play. You can move the circles with your mouse too.
- 3) Find the sine value when the angle is:

$\theta$	$\sin(\theta)$	$\theta$	$\sin(\theta)$
0		$\pi$	
$\frac{\pi}{4}$		$\frac{5\pi}{4}$	
$\frac{\pi}{2}$		$\frac{3\pi}{2}$	
$\frac{3\pi}{4}$		$2\pi$	

- 4) Find the angle value given the  $\sin(\theta)$ :

$\sin(\theta)$	$\theta$
.5	
.75	
2	
-.5	
-.75	

- 5) How long is the period of sine?
- 6) In what quadrants of the unit circle does the sine curve have positive  $y$  – values?
- 7) In what quadrants of the unit circle does the sine curve have negative  $y$  – values?
- 8) Where does  $\sin(\theta)$  have zero  $y$  – values?
- 9) What values does the sine curve range between?