

## Vocabulary: Translating and Scaling Sine and Cosine Functions



### Vocabulary

- **Amplitude** – the vertical distance between the midline and the maximum of the graph of a sine or cosine function.
- **Cosine** – in a right triangle, the length of the leg adjacent to angle  $\theta$  divided by the hypotenuse:  $\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$ .
  - If  $\theta$  has its vertex at the center of a unit circle,  $\cos(\theta)$  is the x-coordinate of the point where the angle intersects the circle.
- **Midline** – the line halfway between the maximum and minimum points of the graph of a sine or cosine function.
- **Period** – the length of the interval that repeats in a function.
  - A function whose values repeat in regular intervals is *periodic*.
- **Radian** – a unit of angle measure, such that one full rotation equals  $2\pi$  radians.
  - Because 1 rotation ( $360^\circ$ ) =  $2\pi$  radians, it follows that  $\pi$  radians =  $180^\circ$ , and  $1 \text{ radian} = \frac{180^\circ}{\pi}$ , or about  $57.3^\circ$ .
  - If a central angle of a circle measures 1 radian, it intercepts an arc that is the same length as the radius of the circle.
- **Sine** – in a right triangle, the length of the leg opposite angle  $\theta$  divided by the hypotenuse:  $\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$ .
  - If  $\theta$  has its vertex at the center of a unit circle,  $\sin(\theta)$  is the y-coordinate of the point where the angle intersects the circle.

