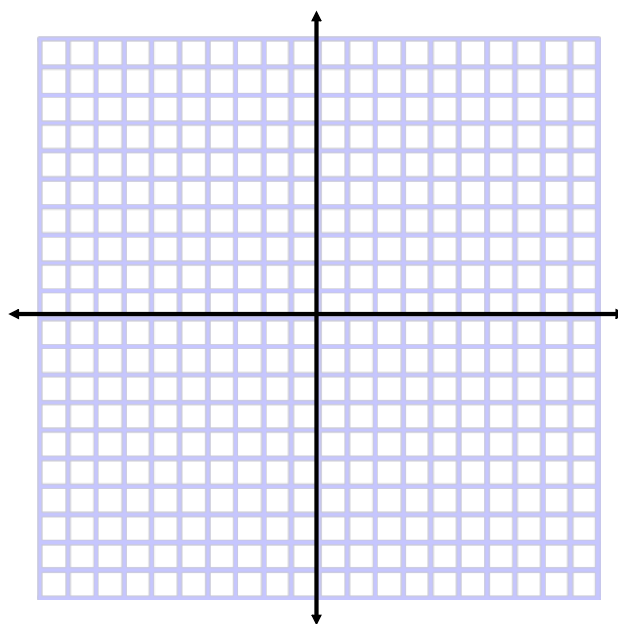


Warm Up

$$f(x) = x^2 \quad \text{base curve}$$

$$g(x) = f(x) + 4$$

$$g(x) = x^2 + 4$$



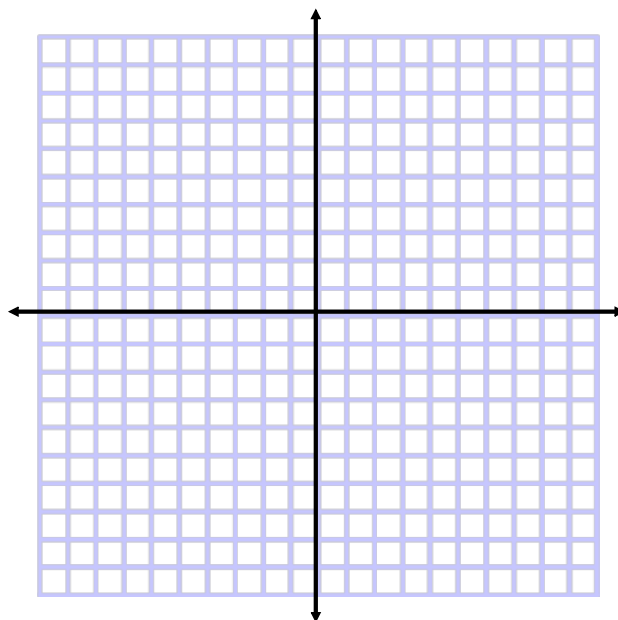
Nov 29-1:49 PM

Warm Up

$$f(x) = x^2 \quad \text{base curve}$$

$$g(x) = f(x-5)$$

$$g(x) = (x-5)^2$$



Nov 29-1:49 PM

Sec. 6.5 - Transformations of the Sine Function

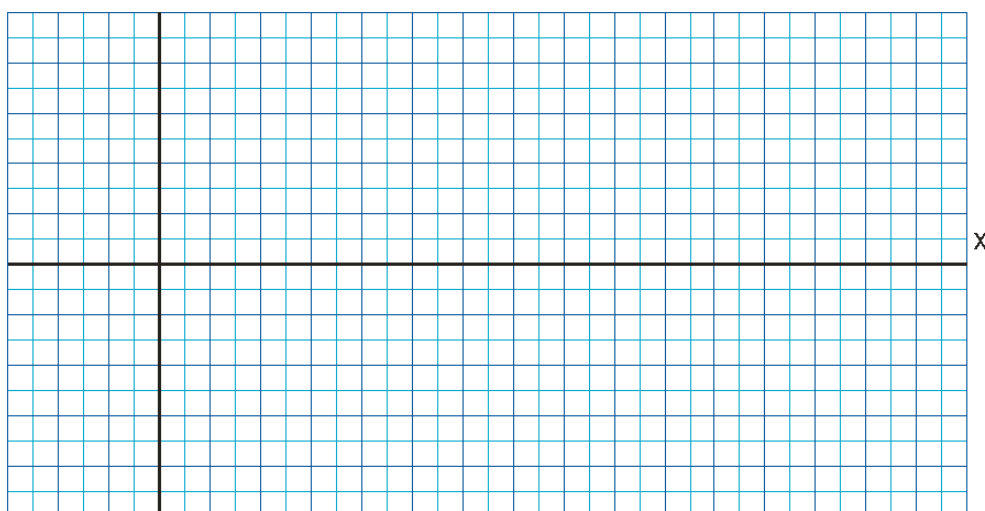
Learning Goal:

By the end of today, I will be able to transform a base curve Sine Function, using vertical and horizontal shifts.

Nov 29-1:42 PM

 $f(x) = \sin(x)$ The Five Key points of the SINE Function.base curve
Y

Amplitude: _____ Period: _____



Shift the 5 key points when graphing transformed sine functions.

Nov 29-1:49 PM

Success Criteria

Graphing Strategies for the Sine Function

1. Describe/list the transformations BEFORE graphing
2. Decide on an appropriate scale BEFORE graphing
3. Plot your base sine curve
4. Plot your transformed sine curve in multiple steps

Nov 29-2:02 PM

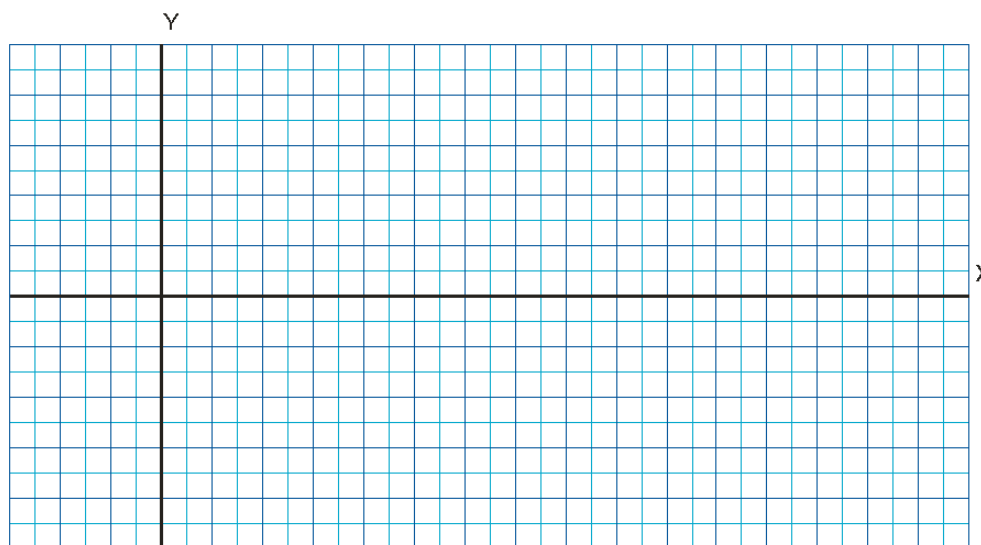
$$f(x) = \sin(x) \text{ base curve}$$

$$g(x) = f(x) + 4$$

$$g(x) = \sin(x) + 4$$

Graphing Strategies for the Sine Function

1. Describe/list the transformations BEFORE graphing
2. Decide on an appropriate scale BEFORE graphing
3. Plot your base sine curve
4. Plot your transformed sine curve in multiple steps



Nov 29-1:49 PM

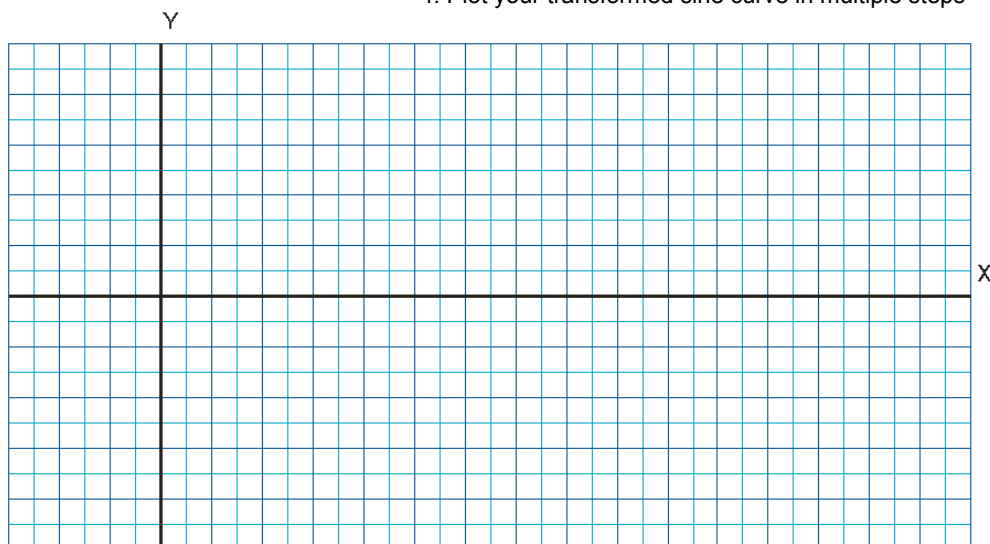
$$f(x) = \sin(x) \quad \text{base curve}$$

Graphing Strategies for the Sine Function

1. Describe/list the transformations BEFORE graphing
2. Decide on an appropriate scale BEFORE graphing
3. Plot your base sine curve
4. Plot your transformed sine curve in multiple steps

$$g(x) = f(x-90^\circ)$$

$$g(x) = \sin(x-90^\circ)$$



Nov 29-1:49 PM

Transformations:

$$y = f(x - h) + k$$

h controls the horizontal translation (left/right)

$h > 0$ (positive) - right

$h < 0$ (negative) - left

k controls the vertical translation (up/down)

$k > 0$ (positive) - up

$k < 0$ (negative) - down

NOTE: $(x + 5)$ is actually $(x - (-5))$, be wary of the signs

Nov 29-2:39 PM

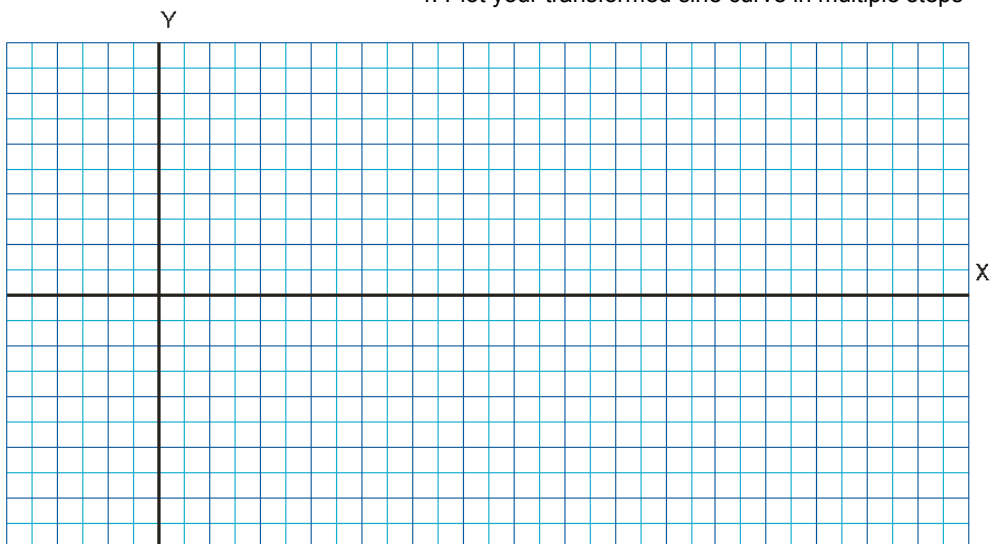
$$f(x) = \sin(x) \text{ base curve}$$

$$g(x) = f(x+30^\circ) + 1$$

$$g(x) = \sin(x+30^\circ) + 1$$

Graphing Strategies for the Sine Function

1. Describe/list the transformations BEFORE graphing
2. Decide on an appropriate scale BEFORE graphing
3. Plot your base sine curve
4. Plot your transformed sine curve in multiple steps



Nov 29-1:49 PM

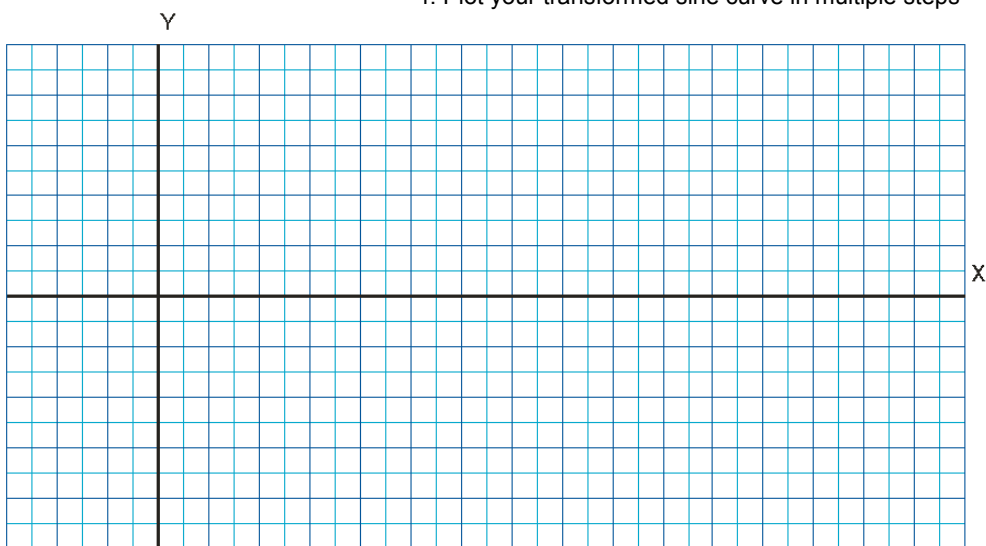
$$f(x) = \sin(x) \text{ base curve}$$

$$g(x) = f(x+45^\circ) - 2$$

$$g(x) = \sin(x+45^\circ) - 2$$

Graphing Strategies for the Sine Function

1. Describe/list the transformations BEFORE graphing
2. Decide on an appropriate scale BEFORE graphing
3. Plot your base sine curve
4. Plot your transformed sine curve in multiple steps



Nov 29-1:49 PM

Learning Goal:

By the end of today, I will be able to transform a base curve Sine Function, using vertical and horizontal shifts.

Homework:

Page 365 - 66 #1, 2, 4c,f, 10

Nov 29-2:07 PM