

Today's Learning Goal(s):

Date: _____

By the end of the class, I will be able to:

- a) sketch sinusoidal functions using transformations.

Last day's work: pp. 383-385 #1 – 4 [12]

6.5 Using Transformations to Sketch Sinusoidal Functions Day2

Date: Dec. 8/15

Ex. 1 Sketch (one cycle) for:

$$y = -3\cos(2x - 90^\circ) - 1$$

$$y = -3\cos(2(x - 45^\circ)) - 1$$

amplitude: 3

period: $\frac{360^\circ}{2} = 180^\circ$

phase shift:

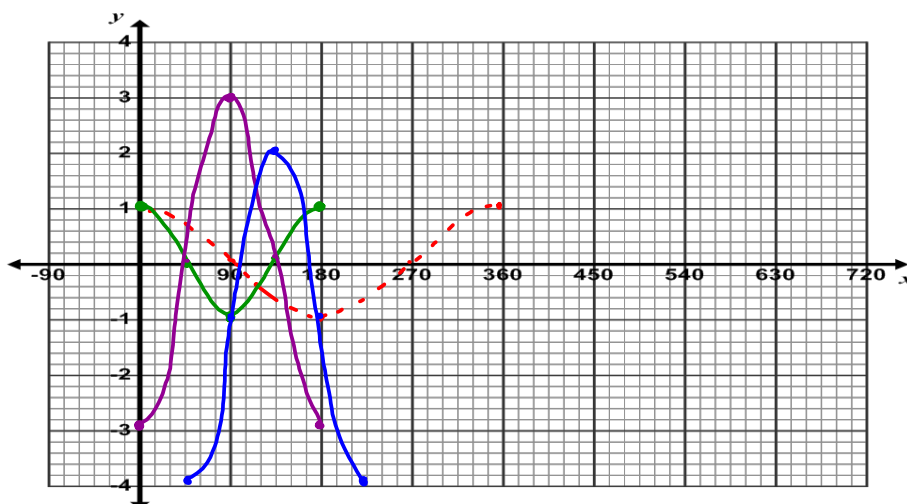
45° right

equation of the axis:
(vertical shift)

$$y = -1$$

range:

$$\{y \in \mathbb{R} \mid -4 \leq y \leq 2\}$$



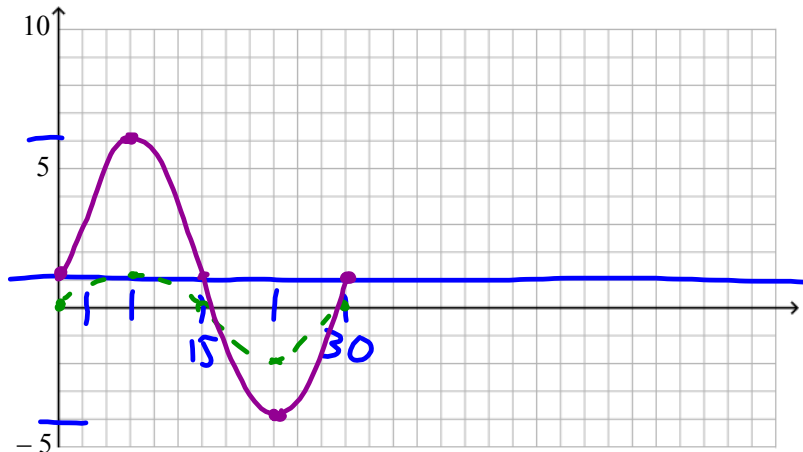
Ex. 2

A water wheel turns. The height of a nail at the circumference of the wheel is given by $h = 5\sin(12t)^\circ + 1$. Graph the function.

(E.g.A)
 $y = 1$

$a = 5$

period = $\frac{360}{12}$
 $= 30$



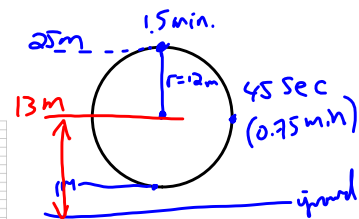
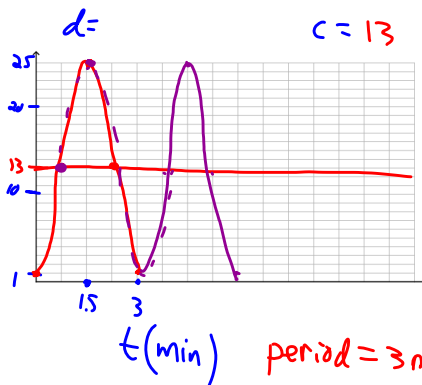
(if time)

Ex. 3 Ron gets on a ferris wheel.

The radius of the wheel is 12 m and he starts 1 m off the ground.
 The wheel takes 3 minutes to go around.

Determine the equation for Ron's height in terms of the time.

$a = 12$ $k =$



$y = a \cos(k(x-d)) + c$
 $y = 12 \cos(120(x-0)) + 13$

period = 3 min

$3 = \frac{360}{k}$
 $k = \frac{360}{3}$
 $= 120$

or
 $y = 12 \sin(120(x-0.75)) + 13$

Are there any Homework Questions you would like to see on the board?

Last day's work: pp. 383-385 #1 – 4 [12]

Today's Homework Practice includes:

pp. 383-385 #5 – 9 [13]

6.2 SineTracer.gsp