

Date: _____

Today's Learning Goal(s):

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

- a) sketch sinusoidal functions using transformations.

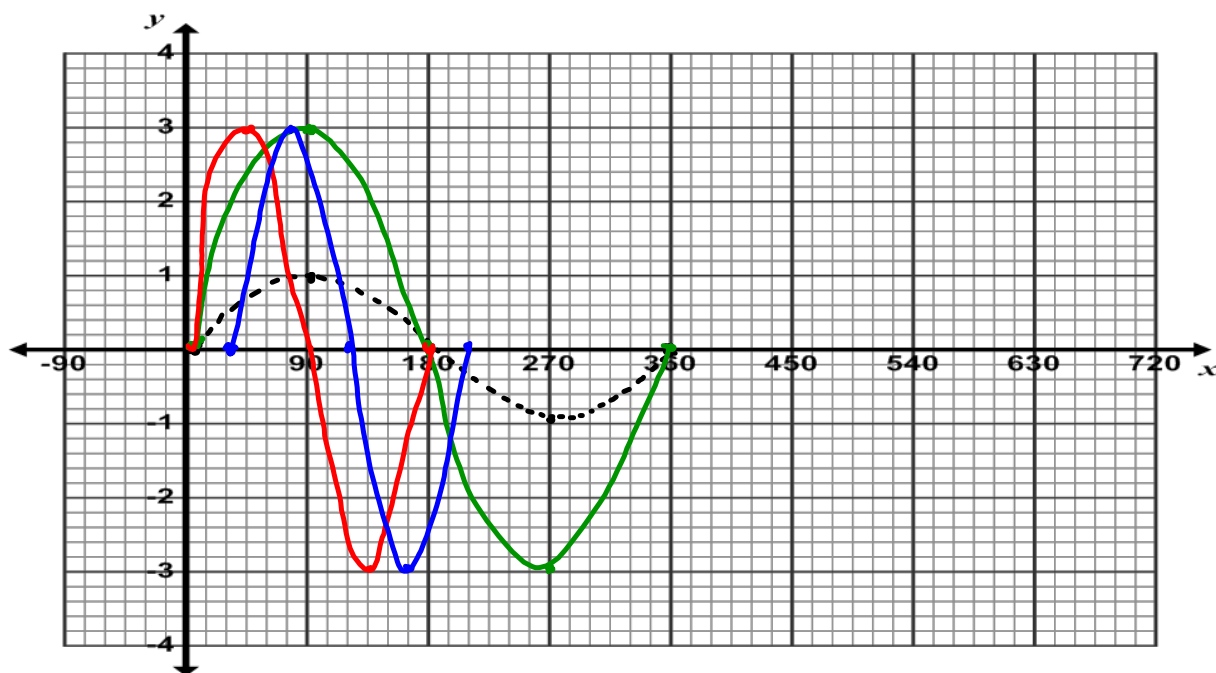
Last day's work: pp. 377-378 A – U
p. 379 #1 – 3

6.5 Using Transformations to Sketch Sinusoidal Functions Day1

Date: _____

Ex. 1 Sketch (one cycle) for:

- a) $y = \sin x$ b) $y = 3 \sin x$ c) $y = 3 \sin(2x)$ d) $y = 3 \sin(2(x - 30^\circ))$



Ex. 2 Graph $y = 2\cos(3(x - 15^\circ)) - 2$

amplitude: 2 ↗

period: $\frac{360}{3}$
 $= 120^\circ$

phase shift: 15°
 to the right

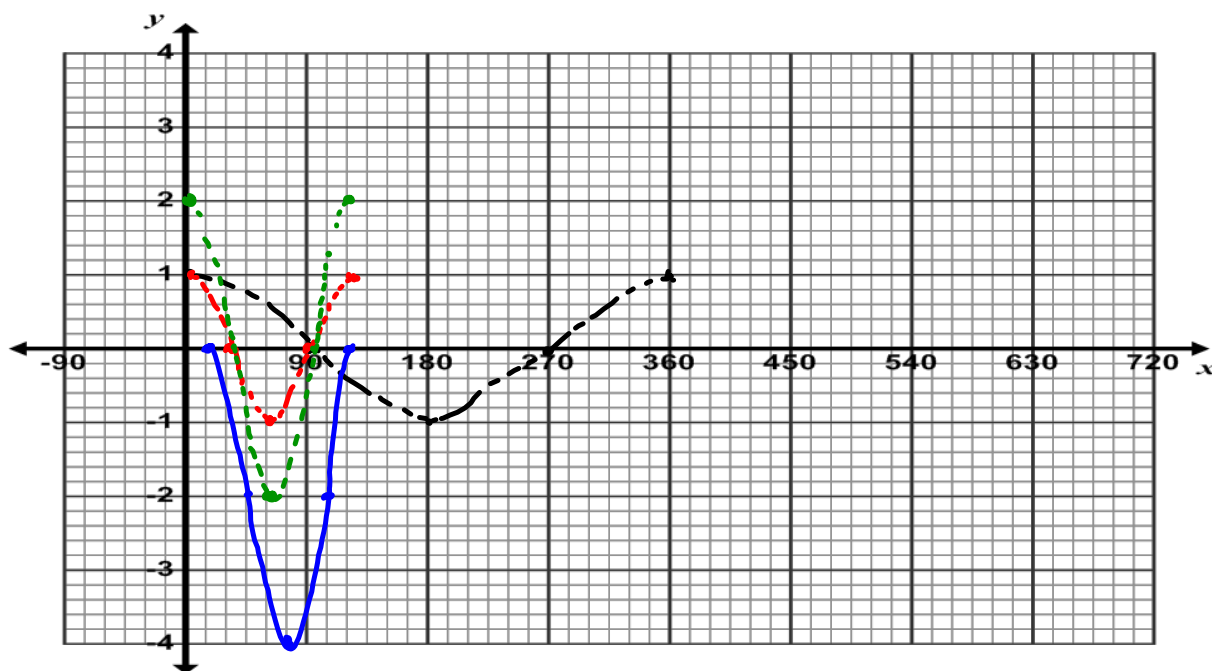
vertical shift: 2 units
 down

equation of the axis:

$$y = -2$$

range:

$$-4 \leq y \leq 0$$

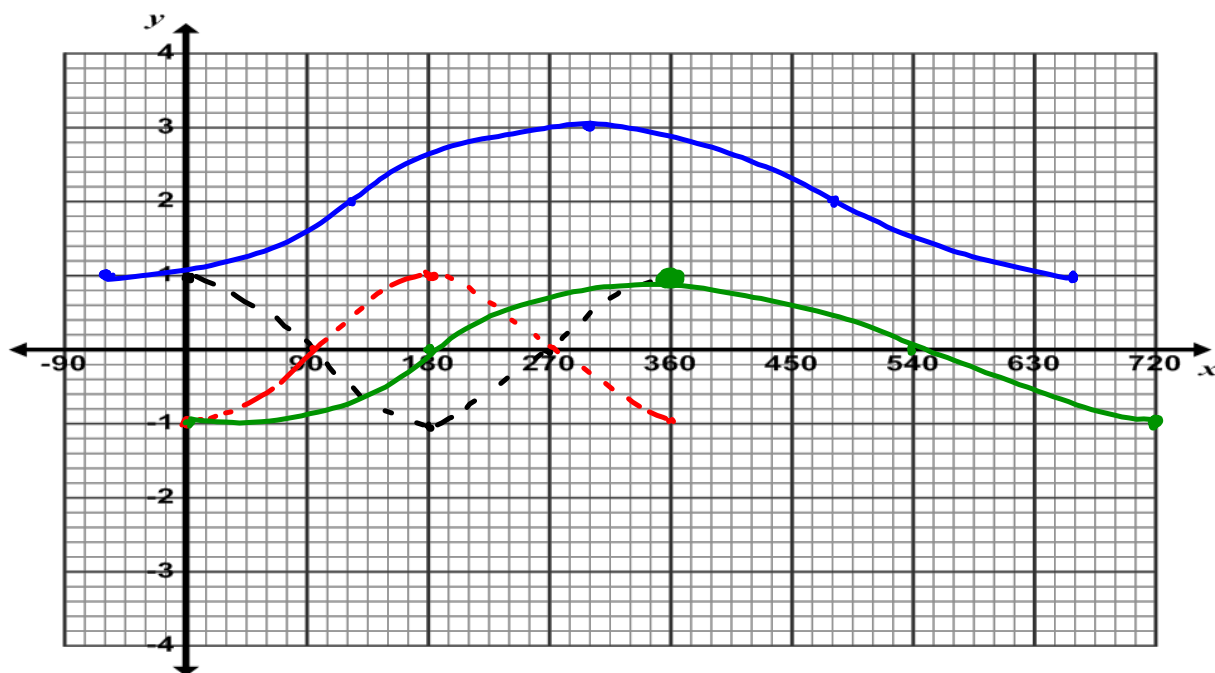


Ex. 3 Graph $y = -\cos(\frac{1}{2}x + 30^\circ) + 2$

$$= -\cos(\frac{1}{2}(x + 60^\circ)) + 2$$

? Did you remember to factor first?

amplitude: 1 period: 720° phase shift: 60° left vertical shift: 2 units up



General Sinusoidal Functions

$y = a\sin(k(x-d)) + c$ and $y = a\cos(k(x-d)) + c$, where

- the amplitude is a
- the horizontal stretch/compression is $\frac{1}{|k|}$
resulting in a period of $\frac{360^\circ}{|k|}$
- the vertical shift is c units.
- the phase shift is d units.

Note: If period = $\frac{360^\circ}{|k|}$, then $k = \frac{360^\circ}{\text{period}}$



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

Last day's work: pp. 377-378 A – U
p. 379 #1 – 3

Today's Homework Practice includes:

pp. 383-385 #1 – 4 [12]

Sketch #3 by hand

Work Ahead p. 384 #7abc

6.2 SineTracer.gsp