Before we begin, are there any questions from last day's work?

Collect Homework: 4.1.2 Tues. Apr.3
4.2.4 Wed. Apr.4

Today's Learning Goal(s):

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

a) Sketch a trig function with 4 transformations.

4.6.1 Combined Transformations of Trigonometric Functions   Date: _Apr. 12/18_

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

Ex. 1 Given $y = 3\sin(2(x-60°)) + 1$, describe the effects of a, k, d, c.

☞ a vertical stretch by a factor of 3   _V.S. by a factor of 3_

☞ k horizontal compression by a factor of 2 (the period will now be 180°)

☞ d horizontal translation of 60° to the right

☞ c vertical translation of 1 unit up

Ex.2 Sketch $y = 3\sin(2(x-60°)) + 1$ by hand.

Method: 1. sketch the base function [$y = \sin x$ or $y = \cos x$]
$\qquad$ 2. apply any compressions and stretches and then sketch again.

$\qquad$ [use the key points: 0°, 90°, 180°, 270°, 360°]
$\qquad$ 3. apply any translations and sketch the final curve _k=2 ∴ period = $\frac{360}{2}$ = 180_

$y = \sin(x)$

$y = \sin(2x)$

$y = 3\sin(2x)$

$y = 3\sin(2(x-60°))$

$y = 3\sin(2(x-60°)) + 1$
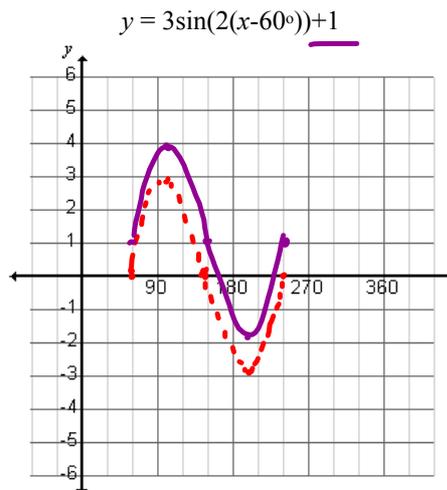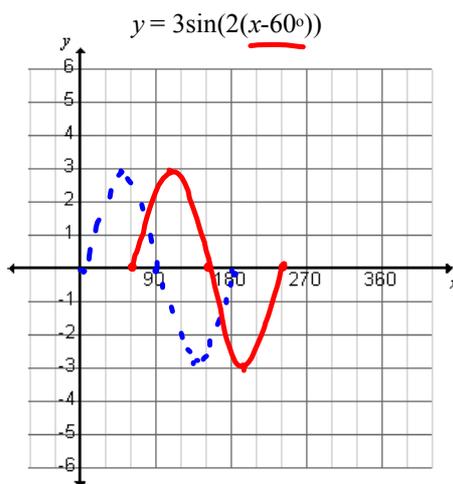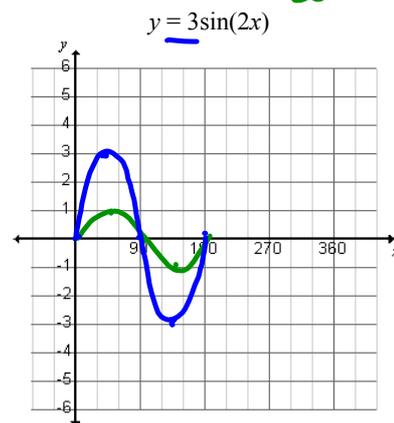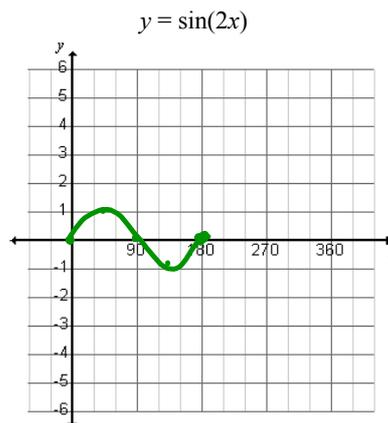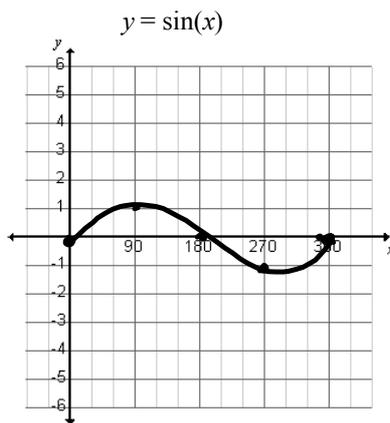
4.6.2 Practice Sketch by hand.

a) $y = 2\sin(x - 90°)$
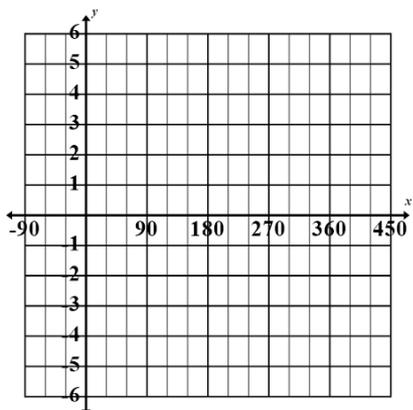
b) $y = \sin(3x) + 4$
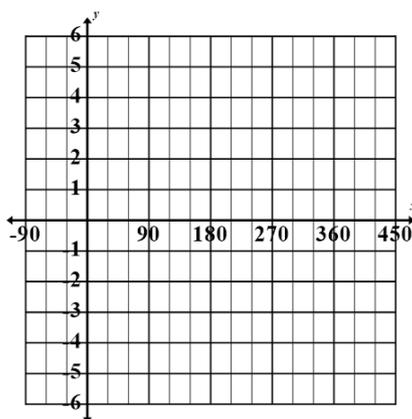
c) $y = \cos(2(x + 30°))$
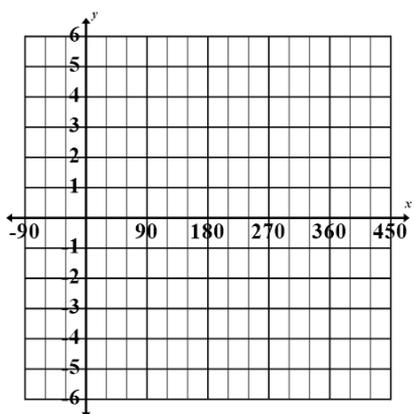
d) $y = 3\sin(4(x - 60°)) - 2$
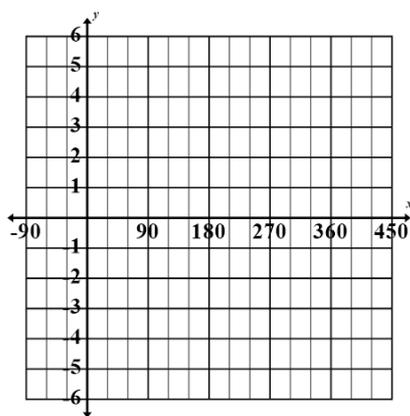
4.6.2 Practice Sketch by hand.

e) $y = -4\sin\left(3\left(x + 60°\right)\right) + 2$
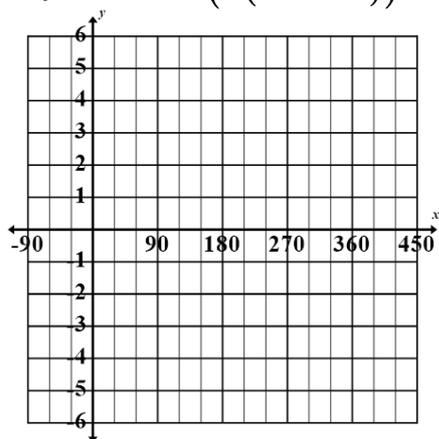
f) $y = 6\cos\left(4\left(x - 120°\right)\right)$

g) $y = -5\cos\left(2\left(x - 45°\right)\right) + 1$

h) $y = 4\sin\left(\dfrac{1}{2}\left(x - 60°\right)\right) + 2$