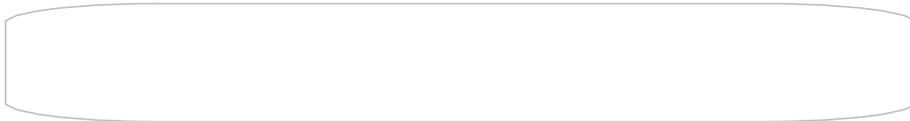


Before we begin, are there any questions from last day's work?



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. 12/17*

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

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

- a* vertical stretch 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 $y = 3 \sin(2(x - 60^\circ)) + 1$ by hand.

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

*period = $\frac{360^\circ}{k}$
 = $\frac{360^\circ}{2}$
 = 180°*

- [use the key points: $0^\circ, 90^\circ, 180^\circ, 270^\circ, 360^\circ$]
 3. apply any translations and sketch the final curve

