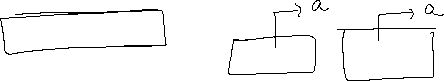
**8.4 The Graphs of Sinusoidal Functions**

**By the end of the lesson you will be able to:**

1. Identify characteristics of equations of sinusoidal functions.

Today we will examine how change the equation of a sinusoidal function changes the graph of the function.

A. Graph



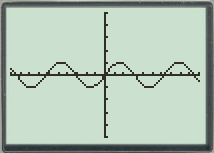
Now, on the same screen, graph and

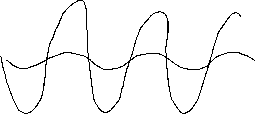
Make a sketch of graph you see.



How does changing the value in effect the graph?





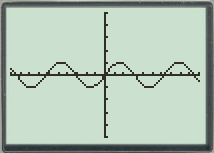


B. Graph



Now, on the same axes graph and

Make a sketch of graph you see.



How does changing the value in effect the graph?

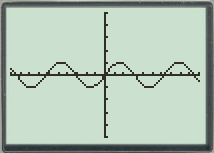


C. Graph

Now, on the same axes graph and



Make a sketch of graph you see.



How does changing the value in

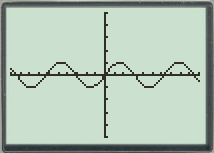
effect the graph?



D. Graph

Now, on the same axes graph and

Make a sketch of graph you see.



How does changing the value in



effect the graph?

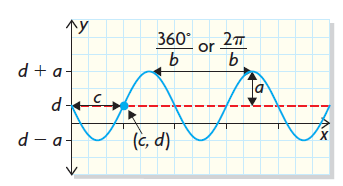


A sinusoidal function of the form:



has the characteristics:



* is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:
* is the number of cycles in 360° or 2.



The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is or



* indicates the horizontal translation that has been applied to the graph.
* gives the equation of the midline,

where

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ value is



* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ value is



**Example 1**



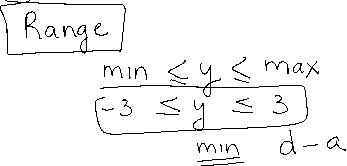
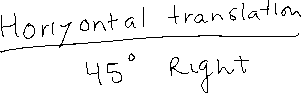
Consider the function:



a) Without graphing, describe characteristics of the function: amplitude, equation of the midline, range, period and horizontal translation.



b) Verify your description by graphing the function.



**Assignment**:

