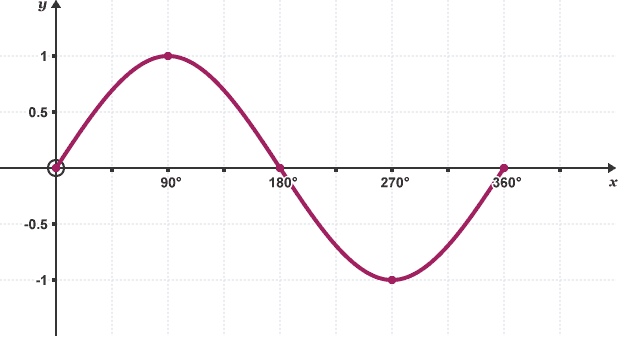
**Module 3 Lesson #4: The Sine Function**



Learning Targets:

* I can graph one cycle of a sine curve.
* I can determine the period of a sine curve and can explain what it means.
* I can determine the amplitude of a sine curve and can explain what it means.
* I can determine the midline of a sine curve.
* I can apply my knowledge of sine curves to real life situations.

**The Sine Function**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0o | 90o | 180o | 270o | 360o |
|  |  |  |  |  |  |

*You just graphed one cycle of ☺*

***frequency =***

***Example 1:*** Graph one cycle of

***Example 2:*** Graph one cycle of

Based on the graph, what is the value of when .

***Example 3:*** Graph one cycle of

What is the maximum height of ? What is the value of at the maximum height?

If you were to graph from , how many cycles would you see?

**Example 4:** Graph one cycle of

State the range of

Graph one cycle of . What transformation is taking place?

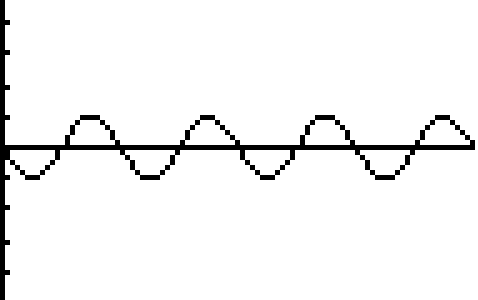
**Example 5:** Graph one cycle of

**Example 6:** Graph one cycle of

**Writing the Equations of Sine Functions**

**Example 1:** Sketch one cycle of a sine curve with an amplitude of and a period of . Write the equation of this curve.

**Example 2:** Find the period for each of the sine curves below. The write an equation for each function. Each graph goes from

**Function A**  **Function B**

