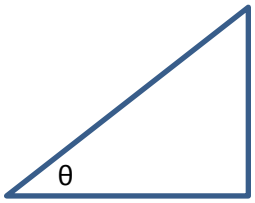
Unit 3 (4.3) Graphing **Trig. Functions – Parent Functions**

Objective: To understand the properties and characteristics of the parent graphs of the basic trigonometric functions

Parent Graph/Function

Graphing the parent functions:

- Using the general idea of the unit circle, label the triangle to the right with the values x, y, and 1.

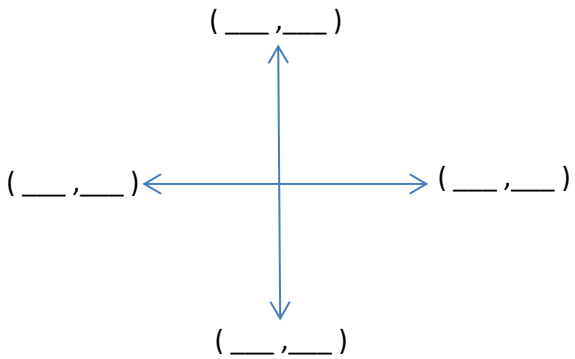


- Fill in the following with the information from the triangle:

sin θ = _____ cos θ = _____ tan θ = _____

csc θ = _____ sec θ = _____ cot θ = _____

- Using the idea of the unit circle, label the quadrantal angles with the appropriate ordered pairs.



- Using the information from above, list the 5 critical points for: y = sin θ.

critical points:

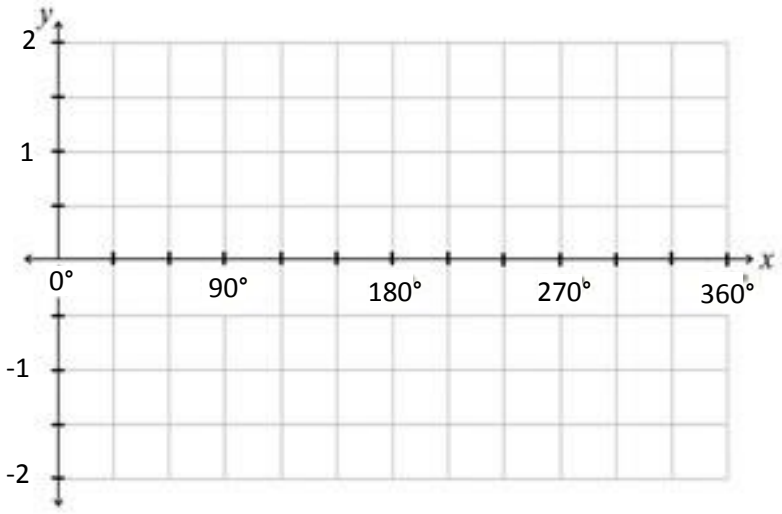
sin _____° = _____ sin _____° = _____ sin _____° = _____

sin _____° = _____ sin _____° = _____

Unit 3 (4.3) Graphing **Trig. Functions – Parent Functions**

- Using the critical points, graph the sine function.

$y = \sin \theta$



- Find the following for the function

Domain: Range: Zeros:

Period: Amplitude: Sinusoidal axis:

***Notice how the sine function repeats. This is because trig functions are periodic. In addition, the graph only goes so high and so low. Why is this?

cycle –

period –

amplitude –

sinusoidal axis (mid-line) -

Unit 3 (4.3) Graphing **Trig. Functions – Parent Functions**

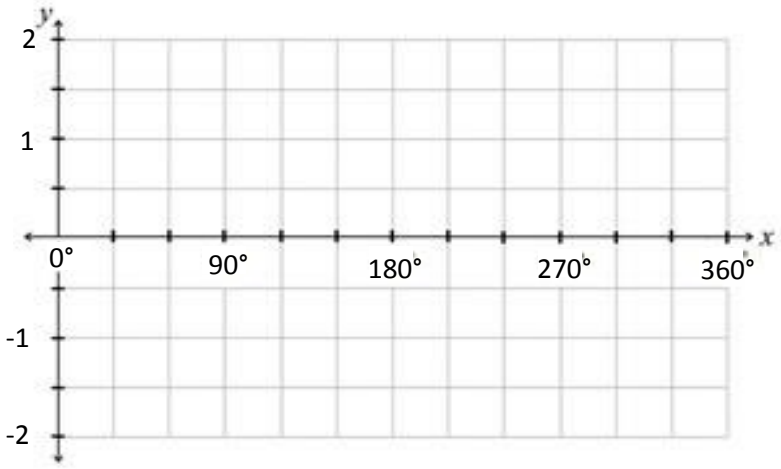
1. What is the period of y = sin θ?

2. What is the amplitude of the sine function?

3. Where is the sinusoidal axis for the function?

- Using the 5 critical points, this time graph the cosine function.

$y = \cos \theta$



- Find the following for the function

Domain: Range: Zeros:

Period: Amplitude: Sinusoidal axis:

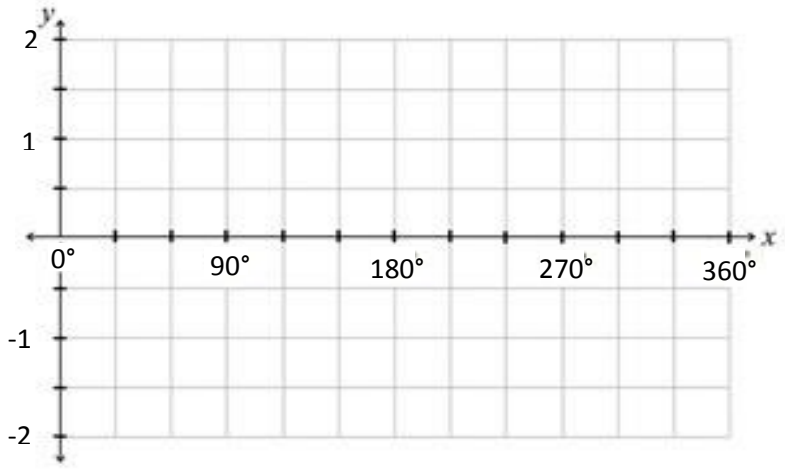
Unit 3 (4.3) Graphing **Trig. Functions – Parent Functions**

- Using the information from page 1, how would you find tan θ?

- How do we graph the value when it is undefined?

- Graph the tan function using the critical points.

$y = \tan \theta$



- Find the following for the function

Domain: Range: Zeros:

Period: Amplitude: Sinusoidal axis:

***Think back to the Ferris Wheel Activity.

1. What type of function were we graphing?
2. Where do you think the sinusoidal axis was?
3. What do you think the amplitude was?
4. What do you think the period was?