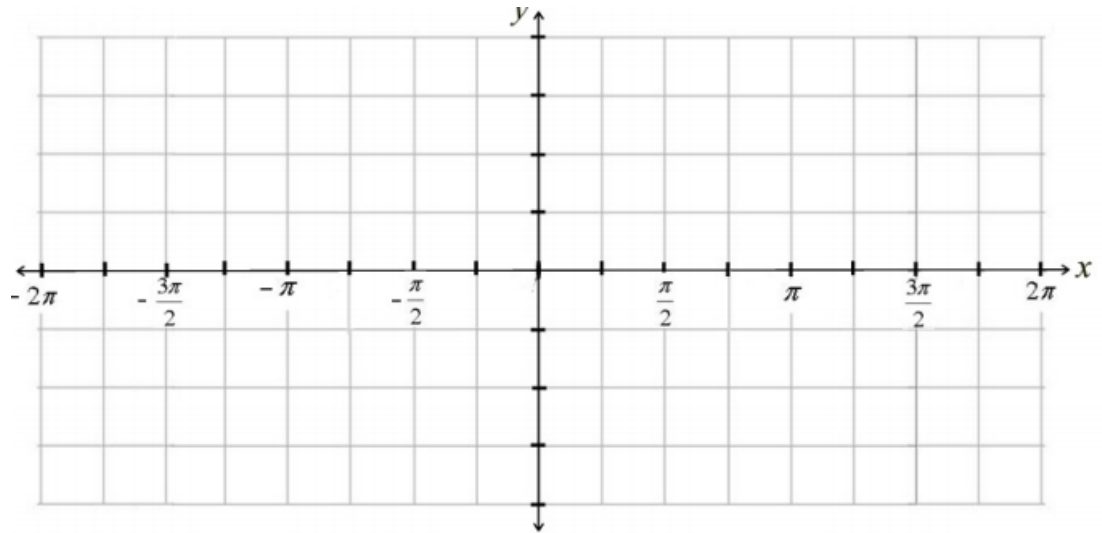


Without using your calculator or unit circle make a rough sketch of each of the following graphs. You need to have correct maximums, minimums, and zeros.

$$y = \sin(\theta)$$

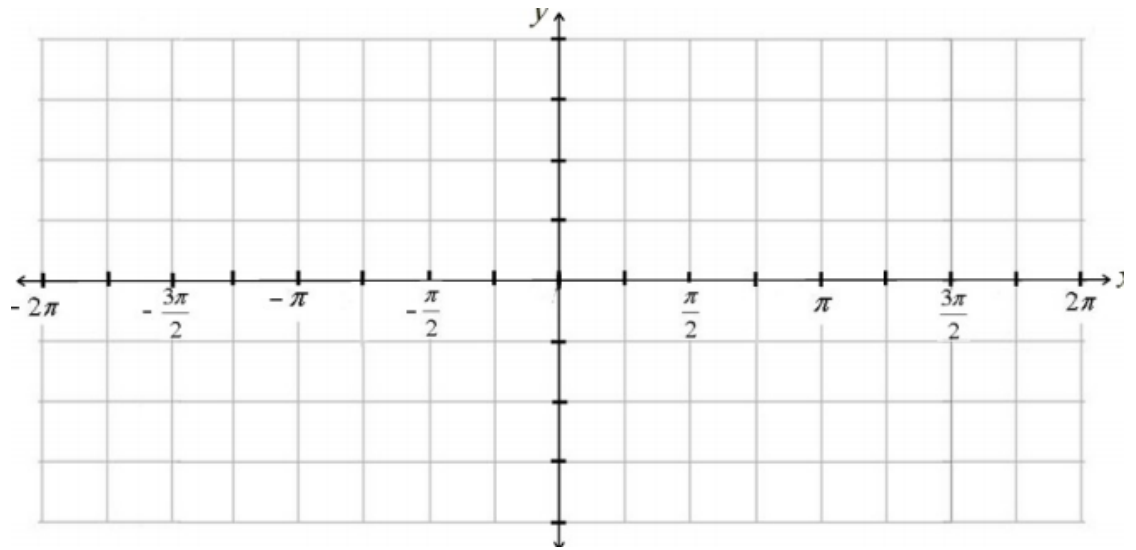


To graph the sine function you may need to reference your unit circle (ferris wheel) until you recognize the pattern.

Follow these directions to make a proper graph.

- 1) Fill in the missing values BETWEEN the given values on the x-axis. i.e. $\frac{-\pi}{4}$.
- 2) There are five x-intercepts on this graph. Where are they? _____, _____, _____, _____, _____
- 3) Place the x-intercepts on the graph.
- 4) This graph has two maximum points. Where are they? _____, _____
- 5) Place these on your graph.
- 6) This graph has two minimum points. Where are they? _____, _____
- 7) Place these points on your graph.
- 8) BETWEEN these key points we can approximate values at the intervals that are multiples of $\frac{\pi}{4}$. The height of the graph at these points is $\pm \frac{\sqrt{2}}{2} \approx \pm .7$. Place these approximations on your graph.
- 9) Connect your points with a smooth curve.

$$y = \cos(\theta)$$



To graph the cosine function you may need to reference your unit circle (ferris wheel) until you recognize the pattern.

Follow these directions to make a proper graph.

- 1) Fill in the missing values BETWEEN the given values on the x-axis. i.e. $\frac{-\pi}{4}$.
- 2) There are four x-intercepts on this graph. Where are they? _____ , _____ , _____ , _____
- 3) Place the x-intercepts on the graph.
- 4) This graph has three maximum points. Where are they? _____ , _____ , _____
- 5) Place these on your graph.
- 6) This graph has two minimum points. Where are they? _____ , _____
- 7) Place these points on your graph.
- 8) BETWEEN these key points we can approximate values at the intervals that are multiples of $\frac{\pi}{4}$. The height of the graph at these points is $\pm \frac{\sqrt{2}}{2} \approx \pm 0.7$. Place these approximations on your graph.
- 9) Connect your points with a smooth curve.