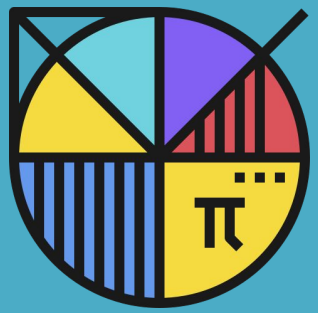
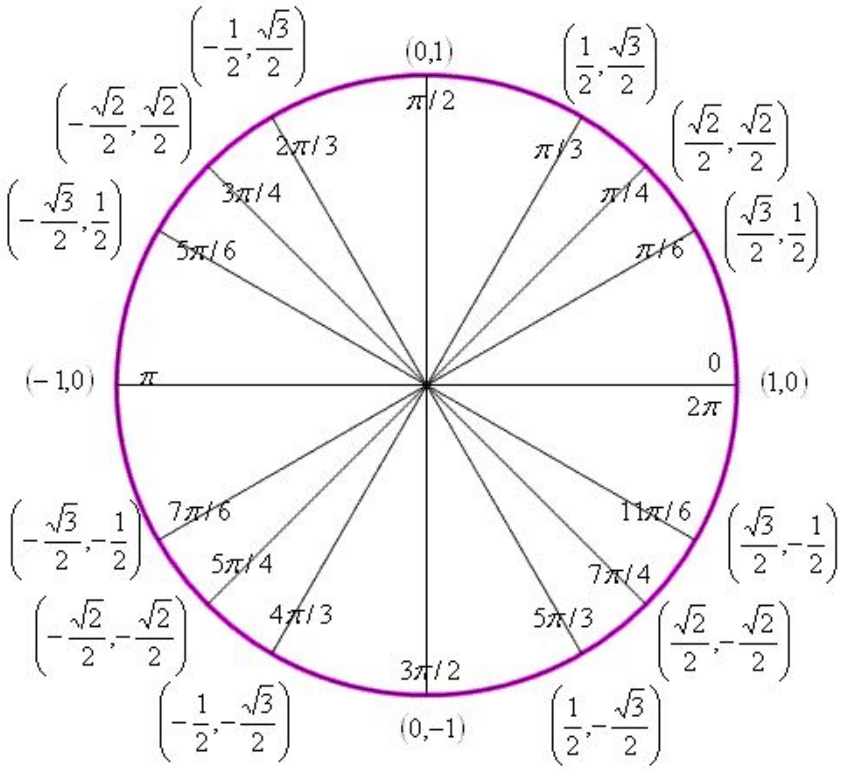
The Unit Circle

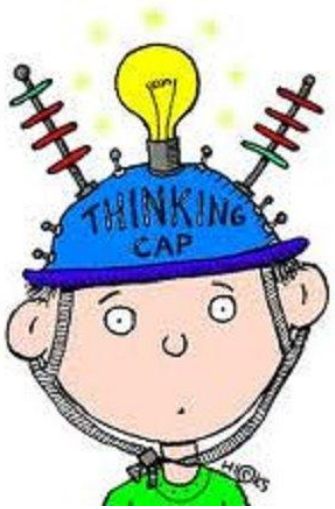


Objective

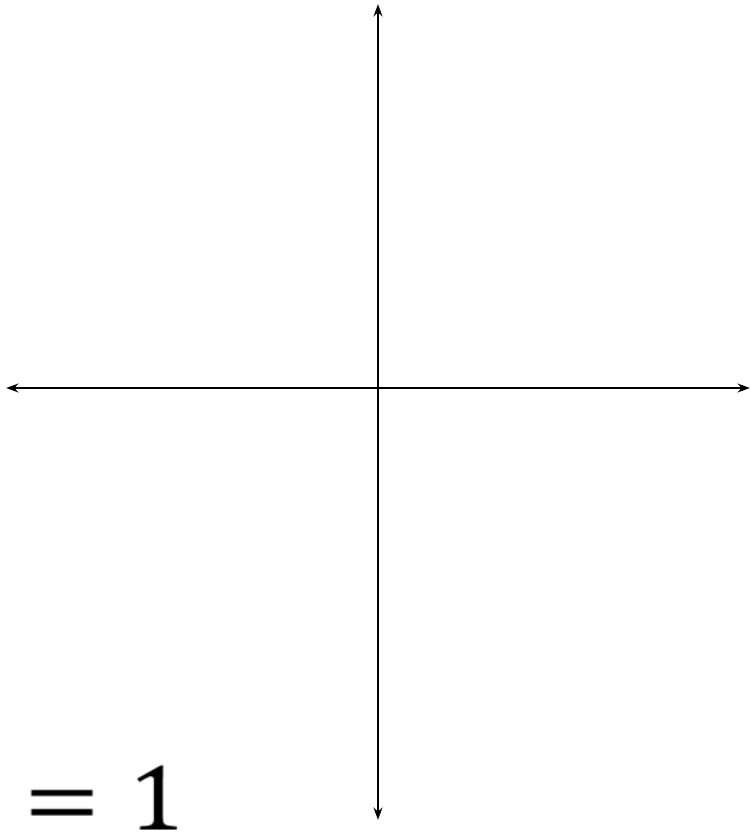
- I can create and interpret the Unit Circle.



What is the unit Circle,
Where did it come from
and Why is it important?
And by the way…do I have
to Memorize IT??



What is the Unit Circle?



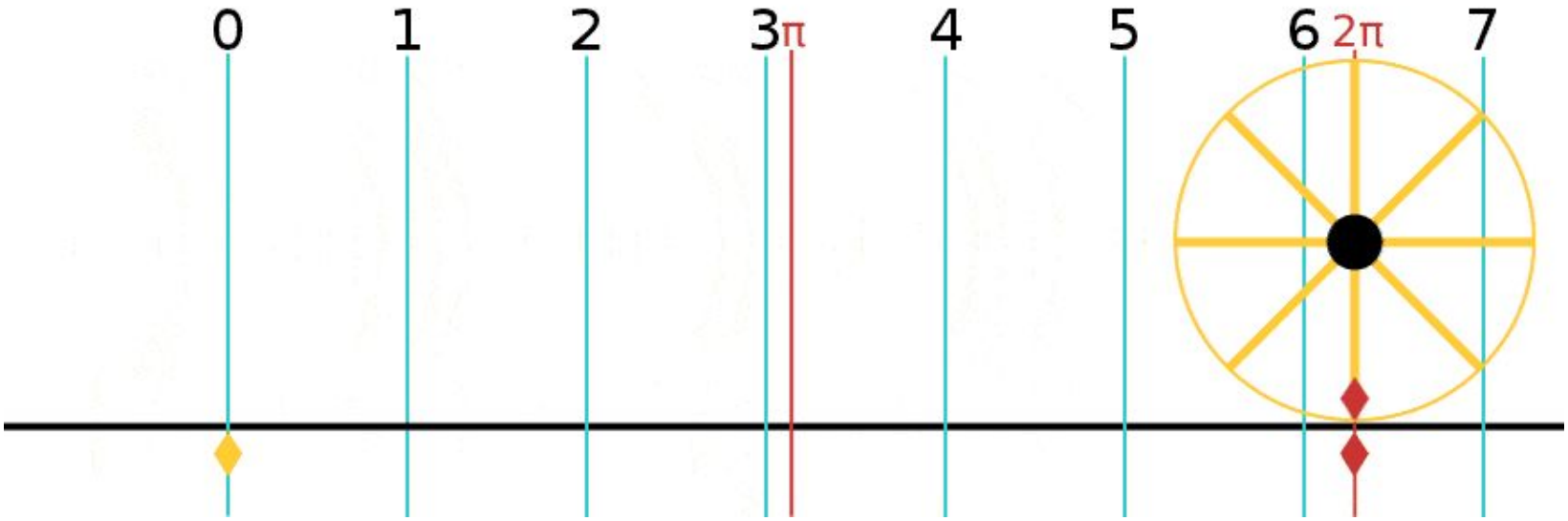
- $x^2 + y^2 = 1$

Where Did the Unit Circle Come From?

- Trigonometry is the study of Triangles. The relationships between sides and angles. First introduced by the Greeks.

- Our friend Isaac Newton created most of the modern Trigonometry during the Enlighted era.

Consider if the Unit Circle was unwrapped…



Six Trig Functions

Sin= y

Csc=1/y

Cos=x

Sec=1/x

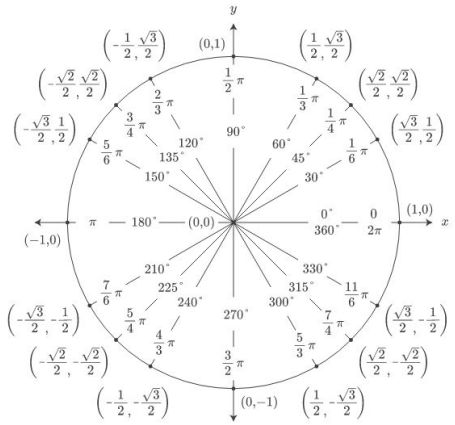
Tan=y/x

Cot=x/y

- Determine the 6 Trigonometric functions of the angle.

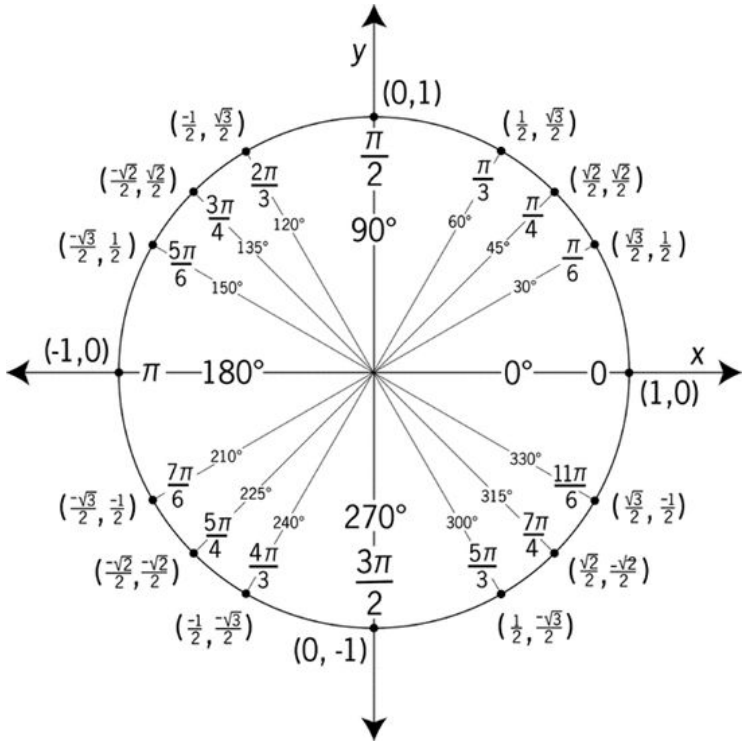
- $\frac{\pi}{3}$

- π



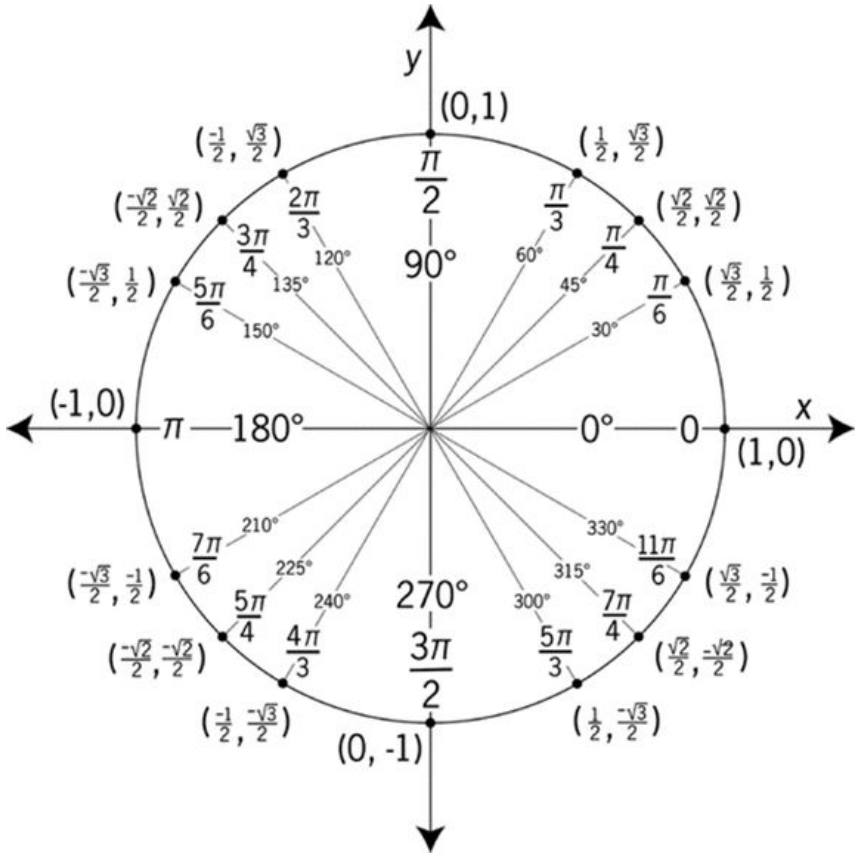
- Find the point (x,y) on the unit circle that corresponds to the real number t.

- $t=\frac{3\pi}{2}$



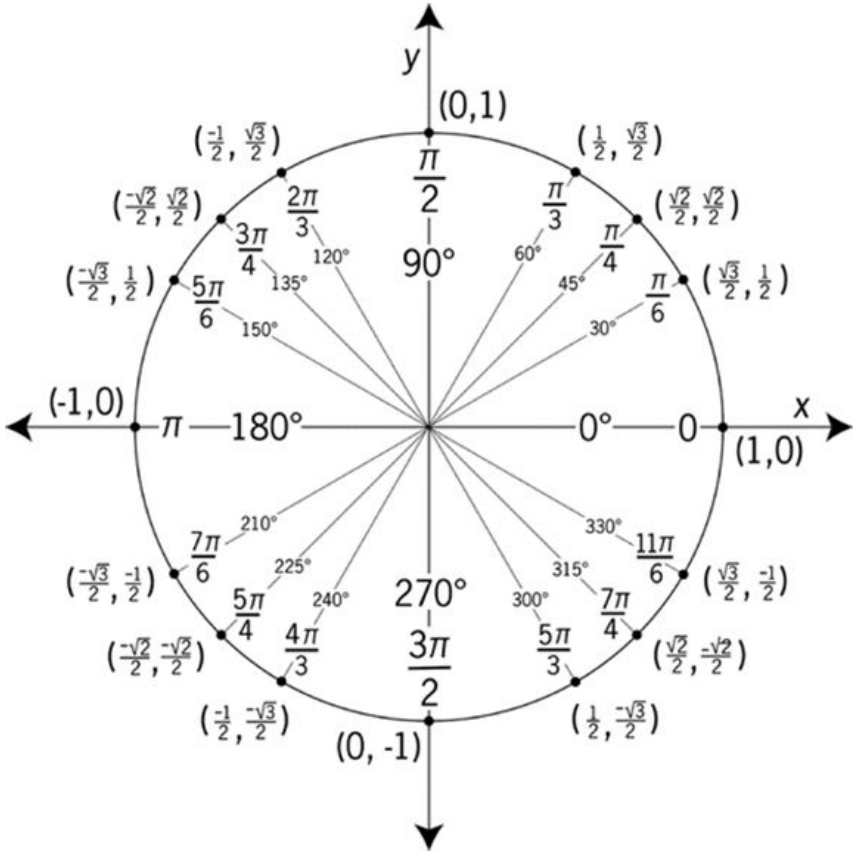
- Evaluate the sin, cos, and tan of the real number:

- $t = 2\pi$



- Evaluate the sin, cos, and tan of the real number:

- $t = -\frac{4\pi}{3}$

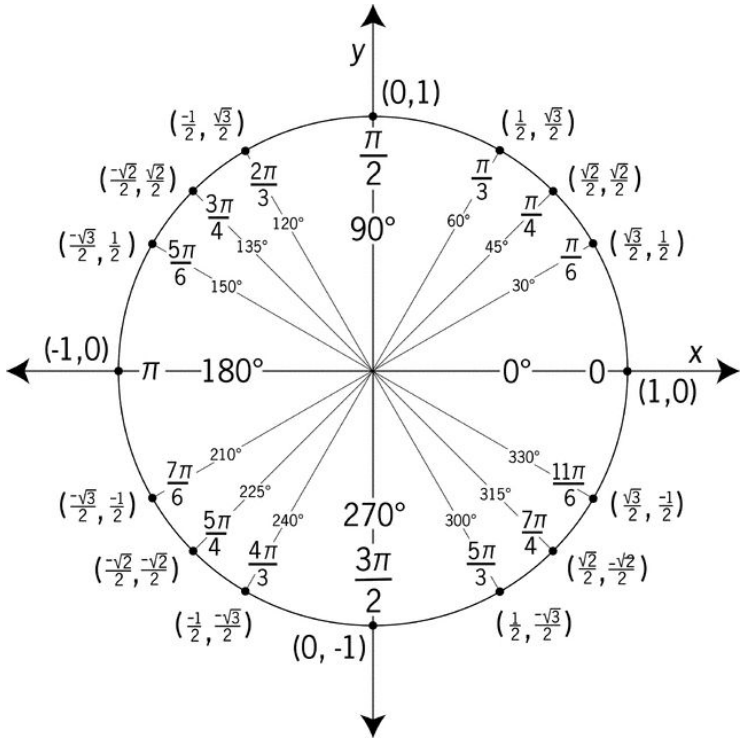


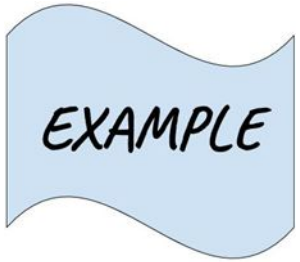
Solve the following Examples without Using a Calculator.

$$\sin\theta = \frac{\sqrt{2}}{2}$$

$$\tan\theta = 1$$

$$\cos\theta = -\frac{\sqrt{3}}{2}$$





Use a Calculator to ESTIMATE

- $Sin\,\frac{2\pi}{3}$

- Cot 1.5

Learning Target:

- I can create the Unit Circle.
- So Why??