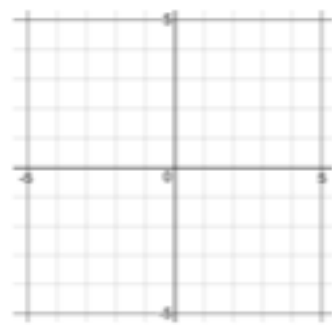
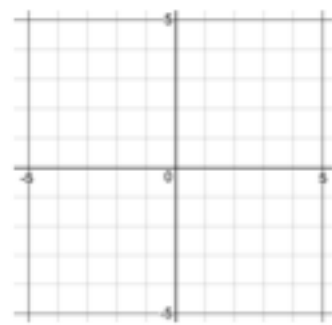


Math 5B Unit Circle Review - Radians

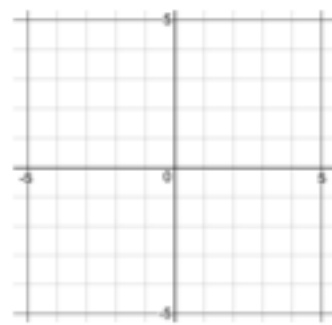
In Radian Measure – 1 revolution = 2π radians



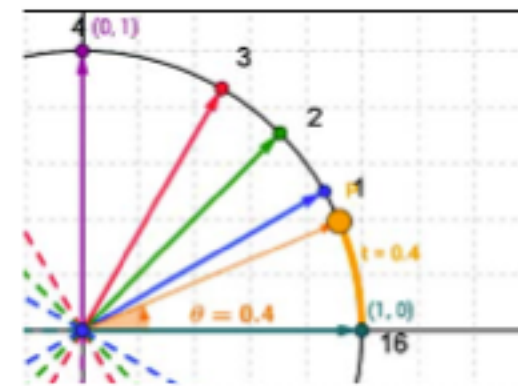
Quadrantal Angles
(1/4 of revolution)



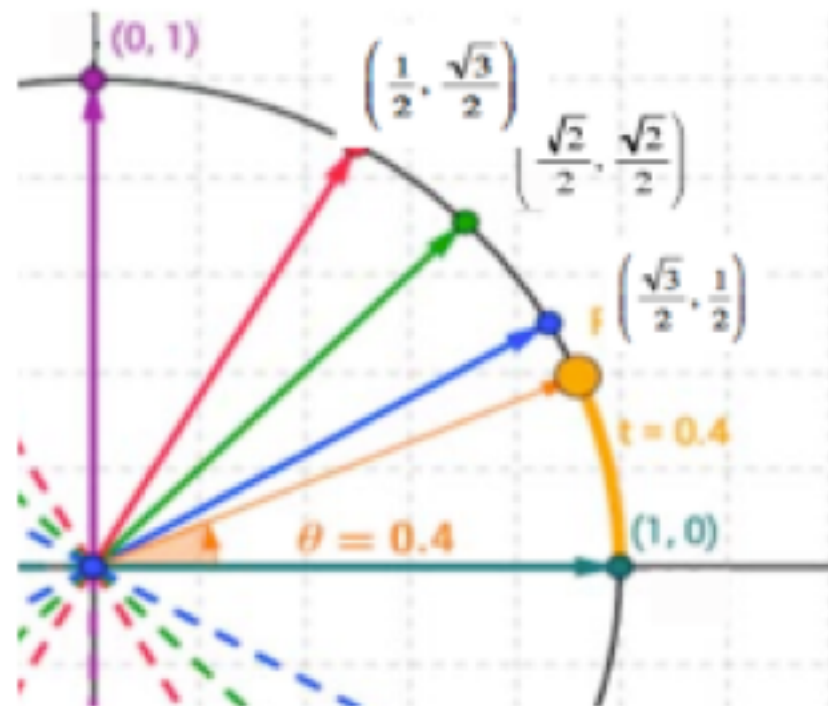
Divide quadrant in half



Divide quadrant in thirds



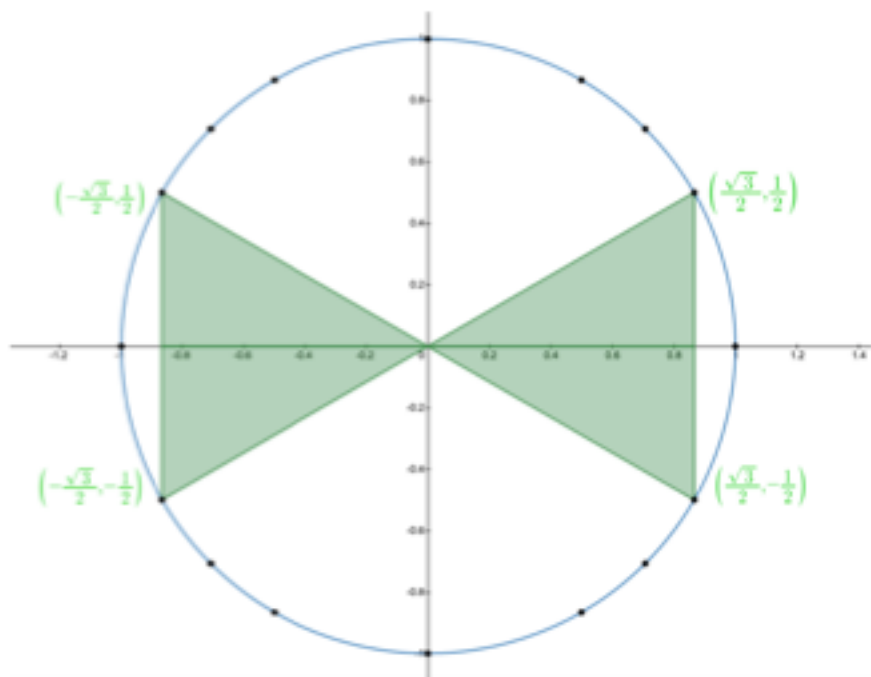
Key Points on the unit circle in Quadrant 1



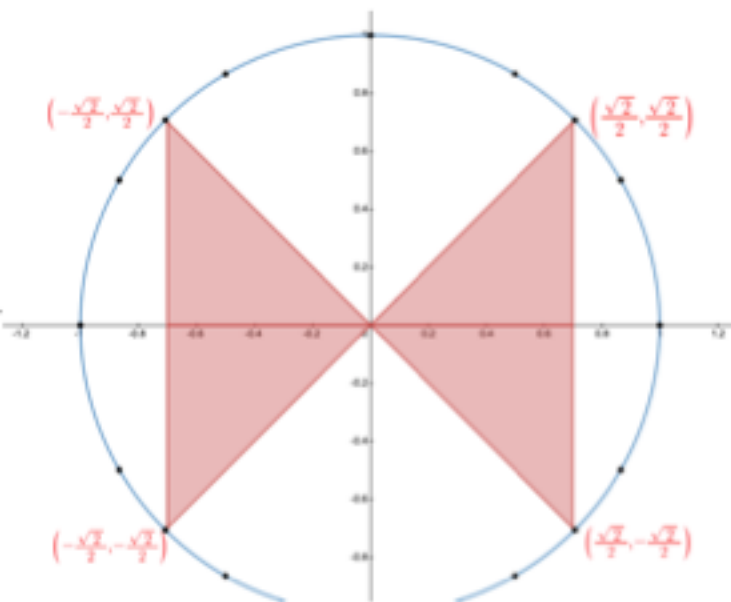
If we know the coordinates of the key points in the first quadrant, reference angles can help us determine the coordinates other key angles around the circle. A reference angle is the **acute** angle formed by the terminal side of a given angle, θ , and the nearest portion of the x-axis.

The following figures show all points on the circle corresponding to the stated reference angle. Using symmetry we can know the coordinates of the corresponding point.

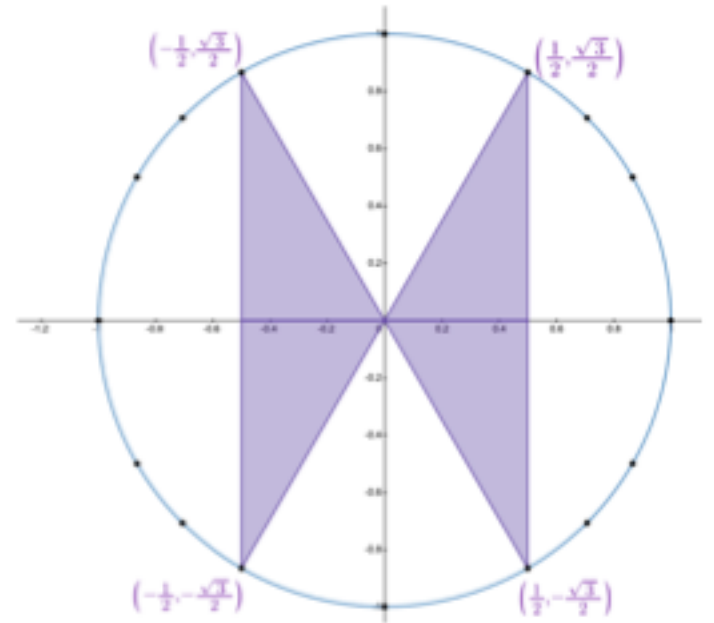
$\pi/6$



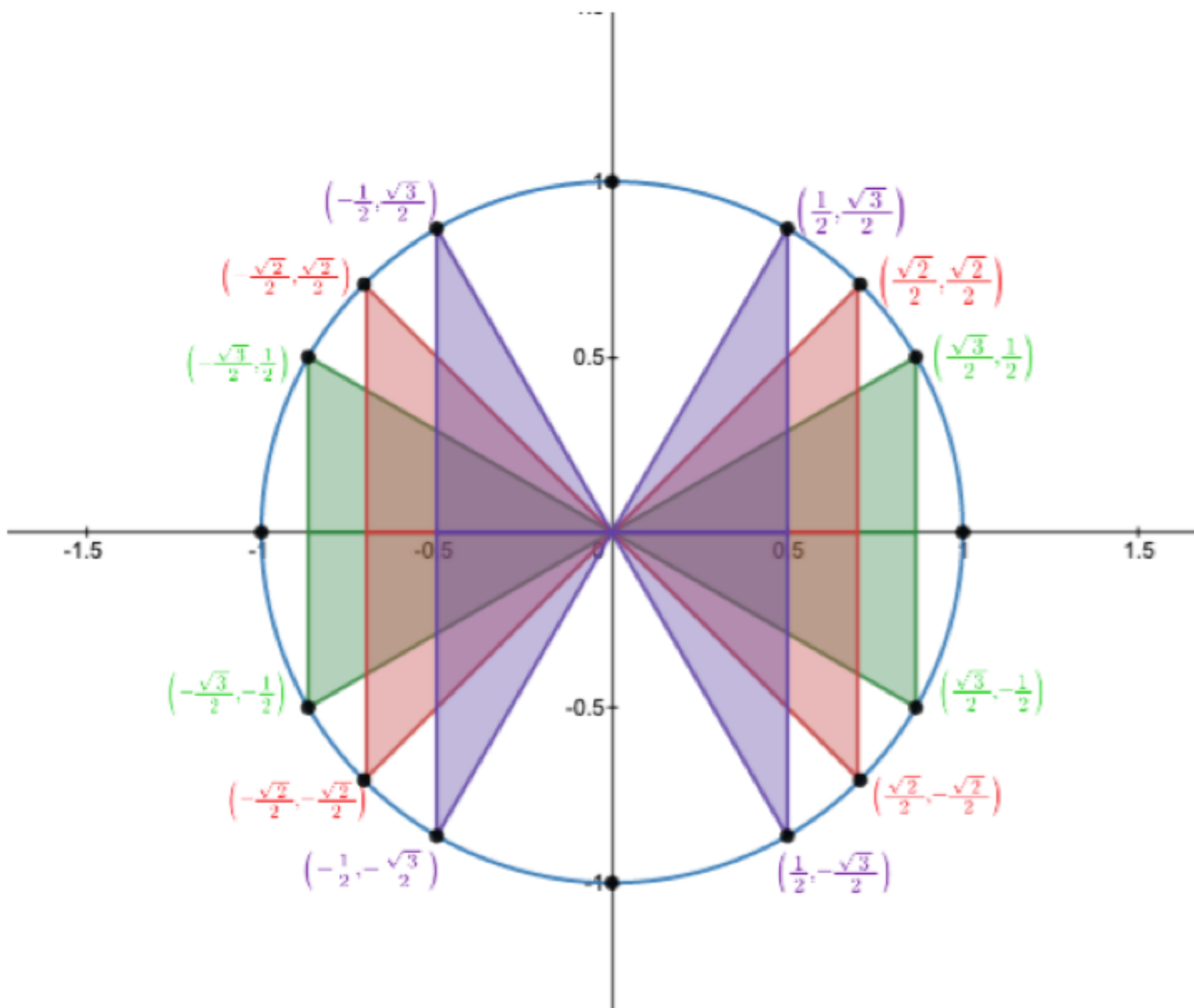
$\pi/4$



$\pi/3$

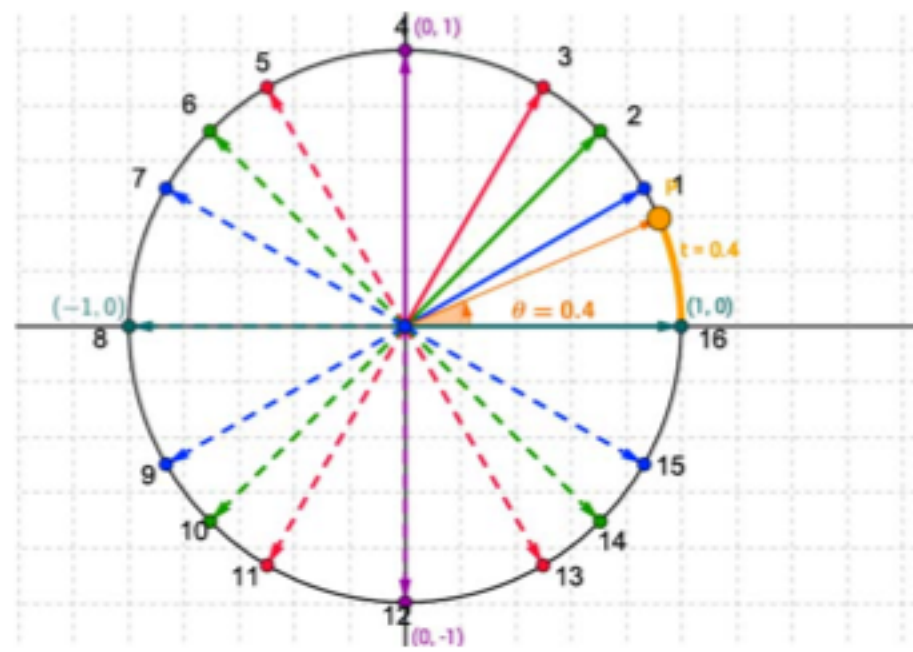


Unit 1 part 2 - Angles



Unit 1 part 2 - Angles

Practice: Locate the following angle and write the corresponding number for each of the following angles. (You need to get quick at this)



$\pi/6$ _____

$5\pi/6$ _____

$5\pi/3$ _____

$3\pi/4$ _____

$4\pi/3$ _____

3π _____

$3\pi/2$ _____

$-7\pi/6$ _____

$-\pi/2$ _____

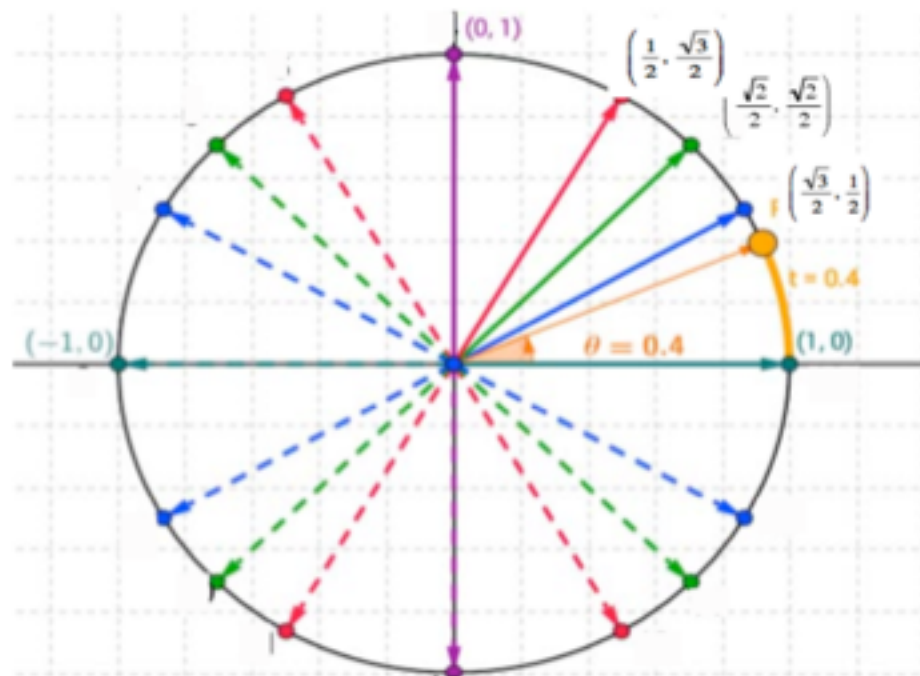
$-7\pi/4$ _____

$-2\pi/3$ _____

$-13/6\pi$ _____

Symmetry and Important Points on the Unit Circle.

We are often interested in looking where the terminal side of some of the "key angles" mentioned earlier intersect the "unit circle". Notice the symmetry that angles with the same reference angle have (blue-> $\pi/6$, green-> $\pi/4$, red-> $\pi/3$). Suppose the points in the first quadrant were given. Can you fill in the rest?



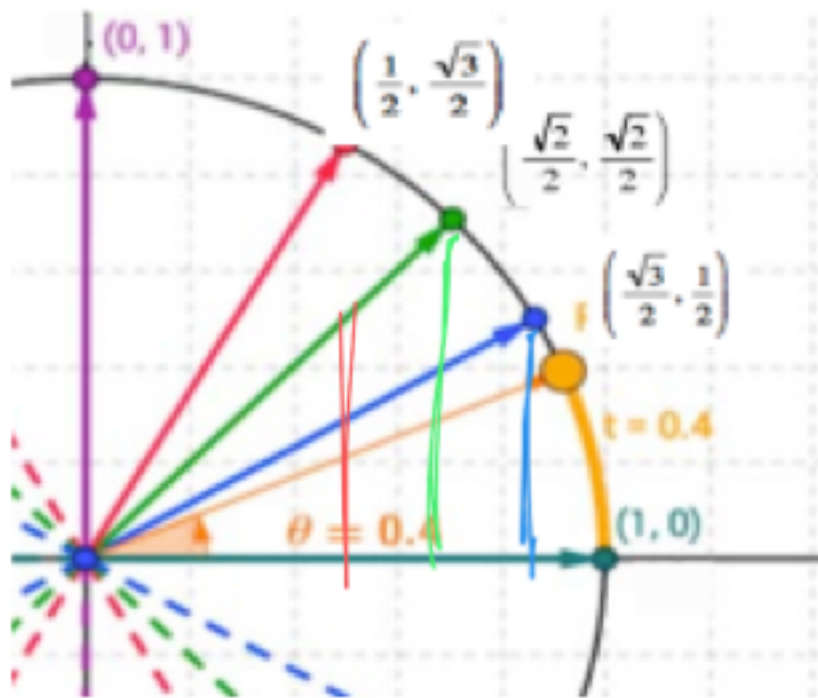
Example: Find the points on the unit circle corresponding to the following angles:

- | | | |
|-----------------|-----------------|------------------|
| $\pi/6$ _____ | $5\pi/6$ _____ | $5\pi/3$ _____ |
| $3\pi/4$ _____ | $4\pi/3$ _____ | 3π _____ |
| $3\pi/2$ _____ | $-7\pi/6$ _____ | $-\pi/2$ _____ |
| $-7\pi/4$ _____ | $-2\pi/3$ _____ | $-13\pi/6$ _____ |

Now comes the easy part. The Trig values.

We know that for every angle (or real number) input, there corresponds a point (x,y) on the unit circle.

$\cos(\theta)$ = the _____ value, $\sin(\theta)$ = the _____ value, and $\tan(\theta)$ = _____.



Example: Find exactly

$\cos(\pi/6)$ _____

$\tan(5\pi/6)$ _____

$\sin(5\pi/3)$ _____

$\sin(3\pi/4)$ _____

$\cos(4\pi/3)$ _____

$\tan(3\pi)$ _____

$\sin(3\pi/2)$ _____

$\cos(-7\pi/6)$ _____

$\cos(-\pi/2)$ _____

$\sec(-7\pi/4)$ _____

$\cot(-2\pi/3)$ _____

$\tan(-13\pi/6)$ _____