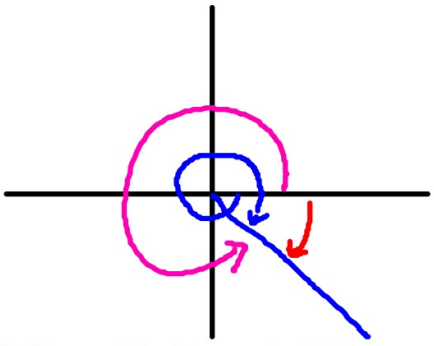
September 10

SWBAT:

Complete the unit circle chart for all six trig functions.

$-\frac{9\pi}{4} = -\left(2\pi + \frac{\pi}{4}\right)$



$\frac{-9}{4} = -2\frac{1}{4}$

$\frac{2\pi}{1} - \frac{\pi}{4} = \frac{8\pi}{4} - \frac{\pi}{4} = \frac{7\pi}{4}$

$-\frac{9\pi}{4} - 2\pi = -\frac{9\pi}{4} - \frac{8\pi}{4} = -\frac{17\pi}{4}$

$-\frac{9\pi}{4} + 2\pi = -\frac{9\pi}{4} + \frac{8\pi}{4} = -\frac{\pi}{4}$

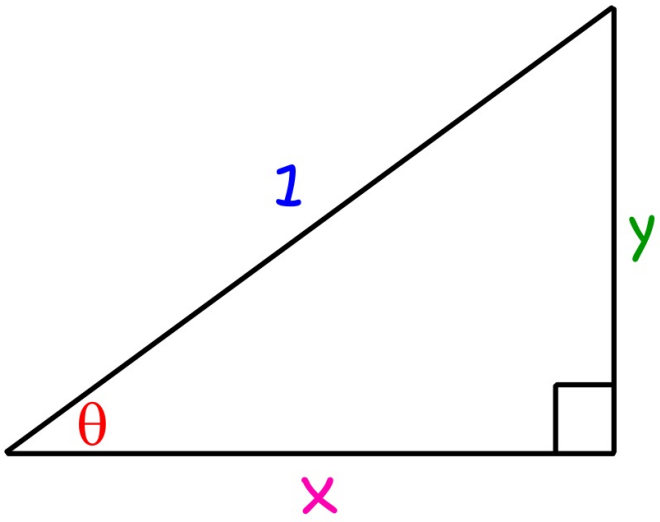
$\rightarrow -\frac{\pi}{4} + 2\pi$

$$\frac{-2\pi}{15}$$

$$\frac{-2\pi}{15} - 2\pi$$

$$\frac{-2\pi}{15} + 2\pi$$

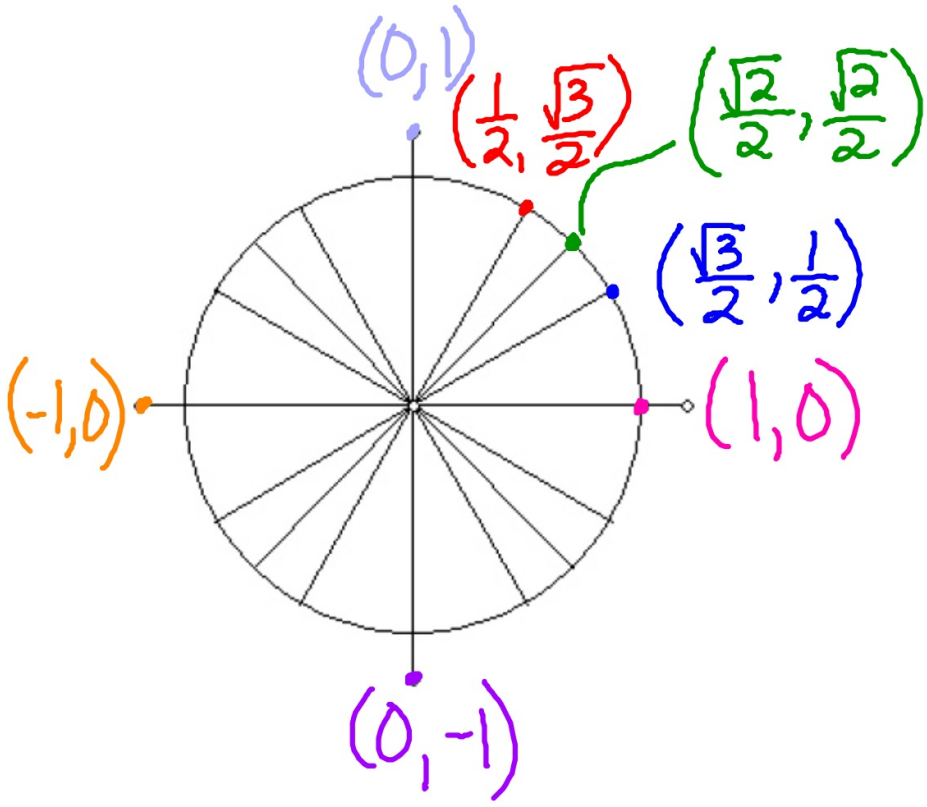
degrees	$\cos(\theta)$	$\sin(\theta)$
0	1	0
30	$\sqrt{3}/2$	$1/2$
45	$\sqrt{2}/2$	$\sqrt{2}/2$
60	$1/2$	$\sqrt{3}/2$
90	0	1
120	$-1/2$	$\sqrt{3}/2$
135	$-\sqrt{2}/2$	$\sqrt{2}/2$
150	$-\sqrt{3}/2$	$1/2$
180	-1	0
210	$-\sqrt{3}/2$	$-1/2$
225	$-\sqrt{2}/2$	$-\sqrt{2}/2$
240	$-1/2$	$-\sqrt{3}/2$
270	0	-1
300	$1/2$	$-\sqrt{3}/2$
315	$\sqrt{2}/2$	$-\sqrt{2}/2$
330	$\sqrt{3}/2$	$-1/2$
360	1	0



$$\cos(\theta) = \frac{x}{1} = x$$

$$\sin(\theta) = \frac{y}{1} = y$$

$$\tan(\theta) = \frac{y}{x}$$



m^R	m^θ	cos θ	sin θ
0	0		
π/6	30		
π/4	45		
π/3	60		
π/2	90		
2π/3	120		
3π/4	135		
5π/6	150		
π	180		
7π/6	210		
5π/4	225		
4π/3	240		
3π/2	270		
5π/3	300		
7π/4	315		
11π/6	330		
	360		

m^R	degrees	x cos(θ)	y sin(θ)	$\frac{y}{x}$ tan θ
0	0	1	0	0
π/6	30	$\sqrt{3}/2$	$1/2$	$1/\sqrt{3}$
π/4	45	$\sqrt{2}/2$	$\sqrt{2}/2$	1
π/3	60	$1/2$	$\sqrt{3}/2$	$\sqrt{3}$
π/2	90	0	1	undefined
2π/3	120	$-1/2$	$\sqrt{3}/2$	$-\sqrt{3}$
3π/4	135	$-\sqrt{2}/2$	$\sqrt{2}/2$	−1
5π/6	150	$-\sqrt{3}/2$	$1/2$	$-1/\sqrt{3}$
π	180	−1	0	0
7π/6	210	$-\sqrt{3}/2$	$-1/2$	$1/\sqrt{3}$
5π/4	225	$-\sqrt{2}/2$	$-\sqrt{2}/2$	1
4π/3	240	$-1/2$	$-\sqrt{3}/2$	$\sqrt{3}$
3π/2	270	0	−1	undef
5π/3	300	$1/2$	$-\sqrt{3}/2$	$-\sqrt{3}$
7π/4	315	$\sqrt{2}/2$	$-\sqrt{2}/2$	−1
11π/6	330	$\sqrt{3}/2$	$-1/2$	$-1/\sqrt{3}$
	360	1	0	0

$$\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{2}\cdot\frac{2}{\sqrt{3}} = \frac{2}{2\sqrt{3}} = \frac{1}{\sqrt{3}}$$

$$\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2}\cdot\frac{2}{1} = \frac{2\sqrt{3}}{2} = \sqrt{3}$$