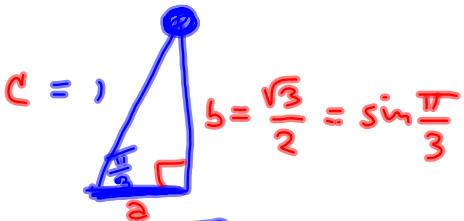
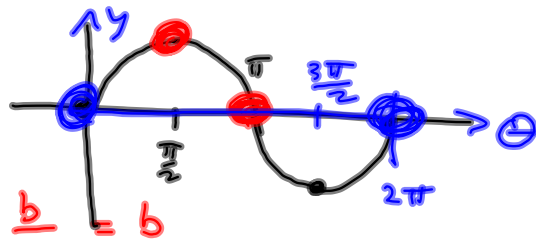


on the unit circle, if you know the angle,  $\theta$ , then the point

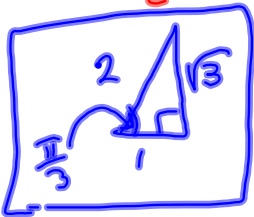
$$(x, y) = (\cos \theta, \sin \theta)$$

Quick Graph of  $\sin \theta$

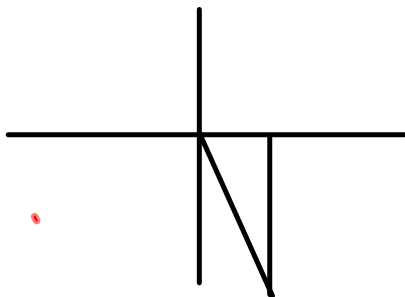
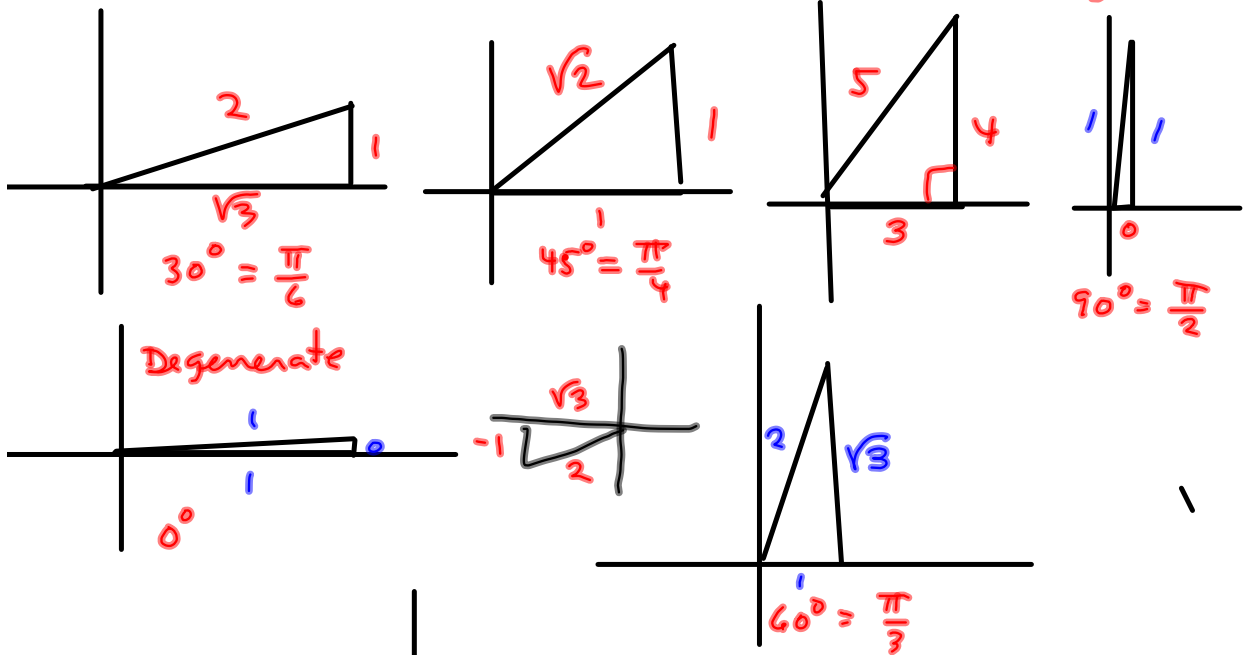


$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2} = \frac{b}{c} = b$$

$$\cos \frac{\pi}{3} = \frac{1}{2} = \frac{a}{c} = a$$



$$\sin^2 \theta + \cos^2 \theta = 1$$



$2\pi - \frac{\pi}{3} = \frac{5\pi}{3}$

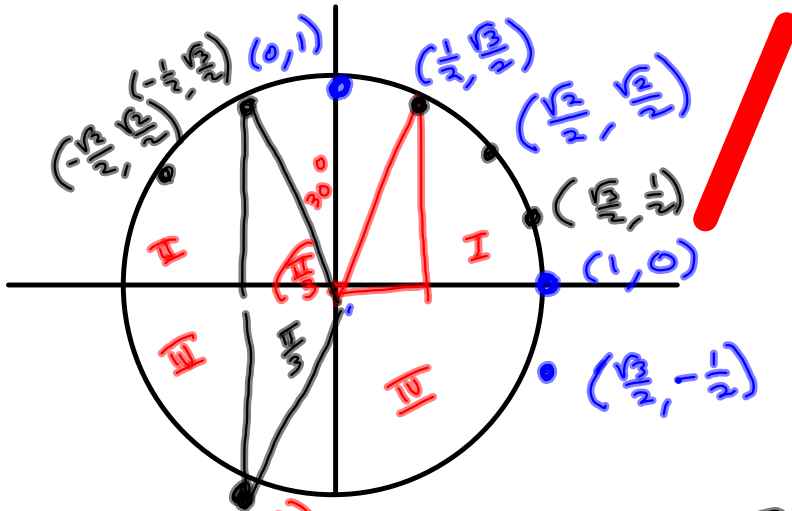
All the way around

less  $\frac{\pi}{3}$  radians

$$\cos \frac{5\pi}{3} = \frac{1}{2}$$

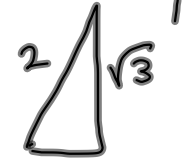
ANALY, measured from the x-axis.

Unit circle



$$120 \cdot \frac{\pi}{180} = \frac{2\pi}{3}$$

Reference angle is  $60^\circ$



$$\cos \frac{\pi}{3} = \frac{1}{2}$$

$$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$$

$$30^\circ = \frac{\pi}{6}$$

$$\sin \frac{\pi}{6} = \frac{1}{2}$$

$$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$

$$45^\circ = \frac{\pi}{4}$$

$$60^\circ = \frac{\pi}{3}$$

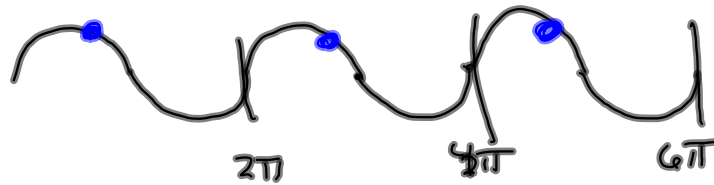
$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

$\frac{5\pi}{6} \cdot \frac{30}{180} = 150^\circ$  is  $30^\circ$  less than  $180^\circ$

$\cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$

Periodic function -



$$f(t+c) = f(t).$$

If  $c$  is the smallest number that makes this true, then  $c =$  the PERIOD of the function.

$$\sin(t+2\pi) = \sin(t) \text{ is of Period } 2\pi.$$

$$\text{Note: } \sin(t+4\pi) = \sin(t)$$

§ 1,2 #5 1-10, 13, 16, 19, ..., 58

Bad Times 4 me!

MWF: 8-10, 12-1

TR: 9-10, 12-1

B4 3pm

After 7am