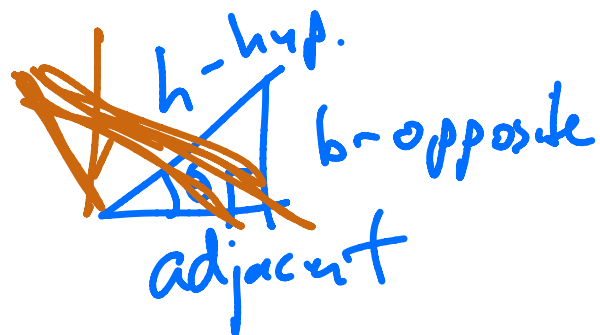


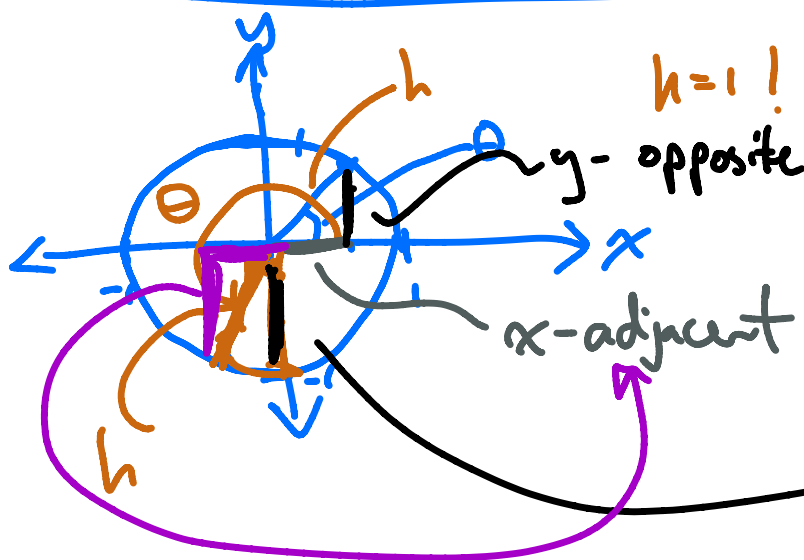
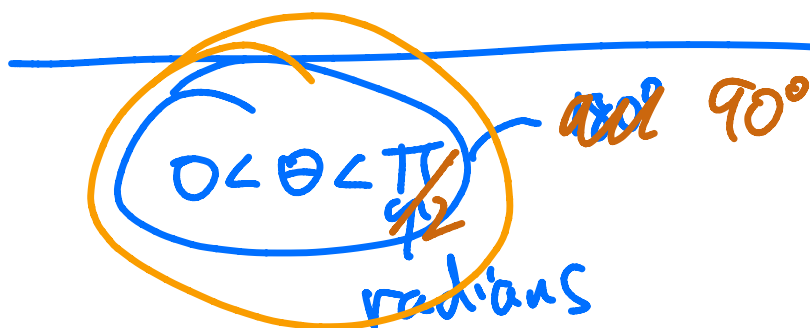
Calc I Review

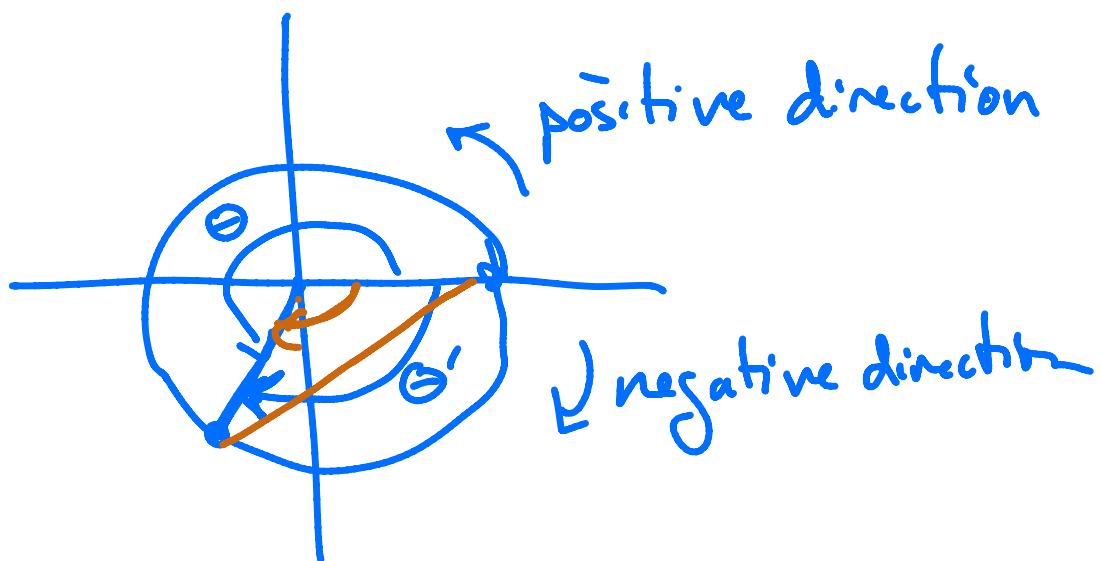
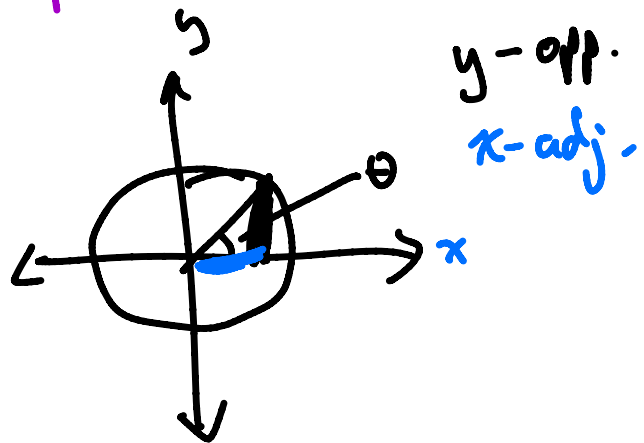
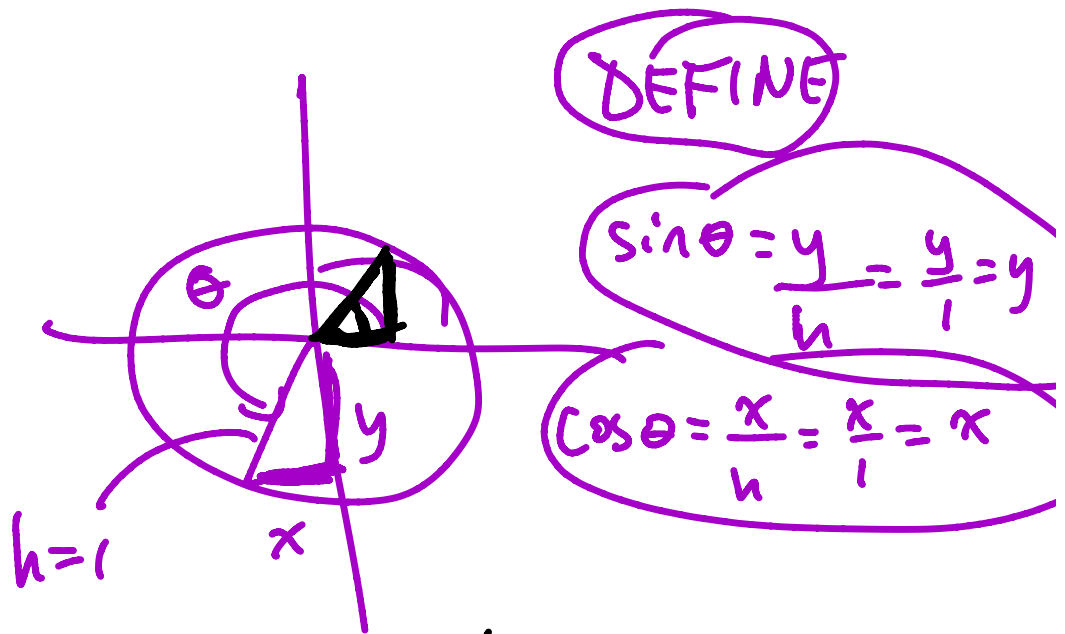


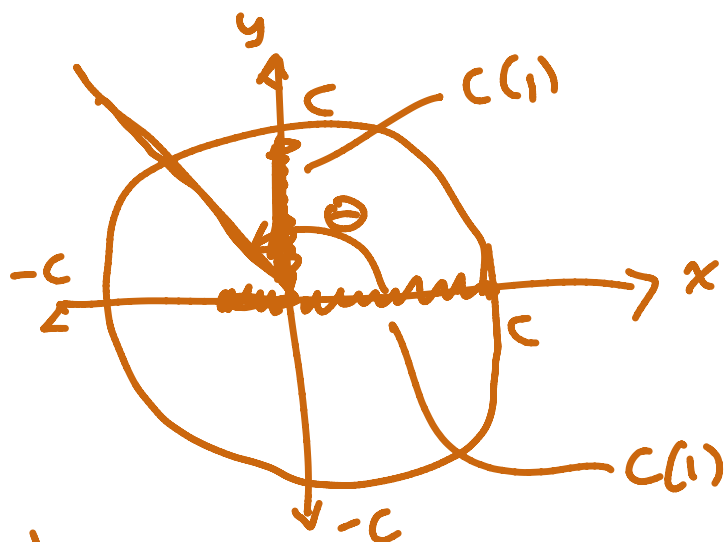
$$\sin \theta = \frac{b}{h}$$

$$\cos \theta = \frac{a}{h}$$

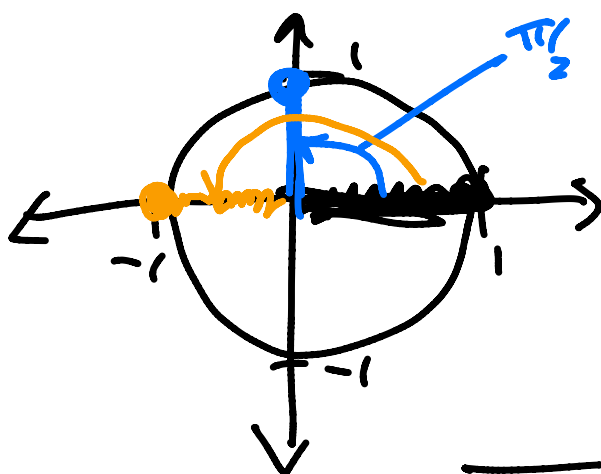
$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{b}{a}$$







$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{y}{c} \quad \bigg| \quad \cos \theta = \frac{\text{adj}}{\text{hyp}} = \frac{x}{c}$$



$$\theta = 0$$

$$\sin \theta = y = 0$$

$$\sin 0 = 0$$

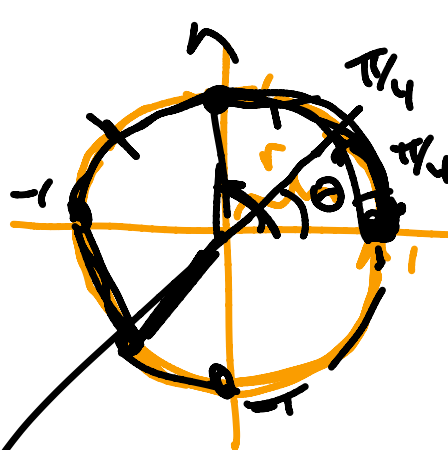
$$\cos 0 = 1$$

$$\sin(\pi/2) = 1 \text{ (y-value)}$$

$$\cos(\pi/2) = 0 \text{ (x-value)}$$

$$\sin(\pi) = 0$$

$$\cos(\pi) = -1$$



circumference?

$$2\pi r$$

$$r=1$$

$$= 2\pi(1)$$

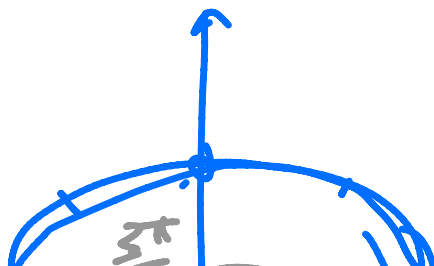
$$= 2\pi$$

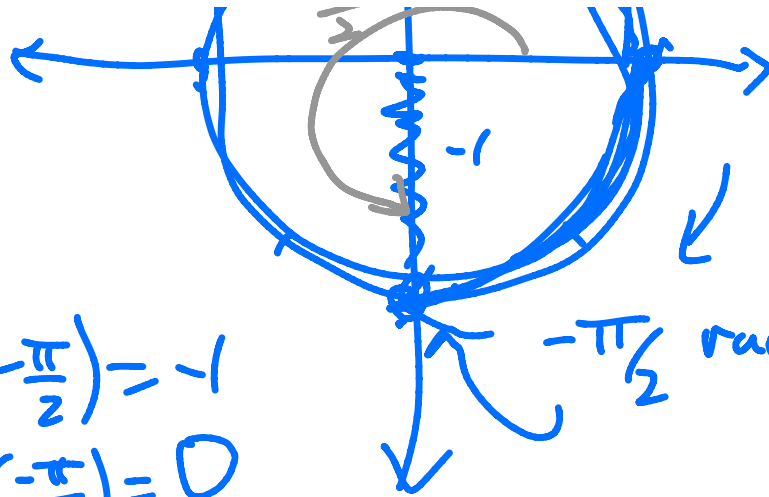
radius — how far around the circle

angles by radius, rather than degrees.

$$\frac{2\pi}{4} = \frac{\pi}{2} \quad \left| \quad \frac{2\pi}{2} = \pi \text{ radians} \right.$$

θ — radians, instead of degrees.



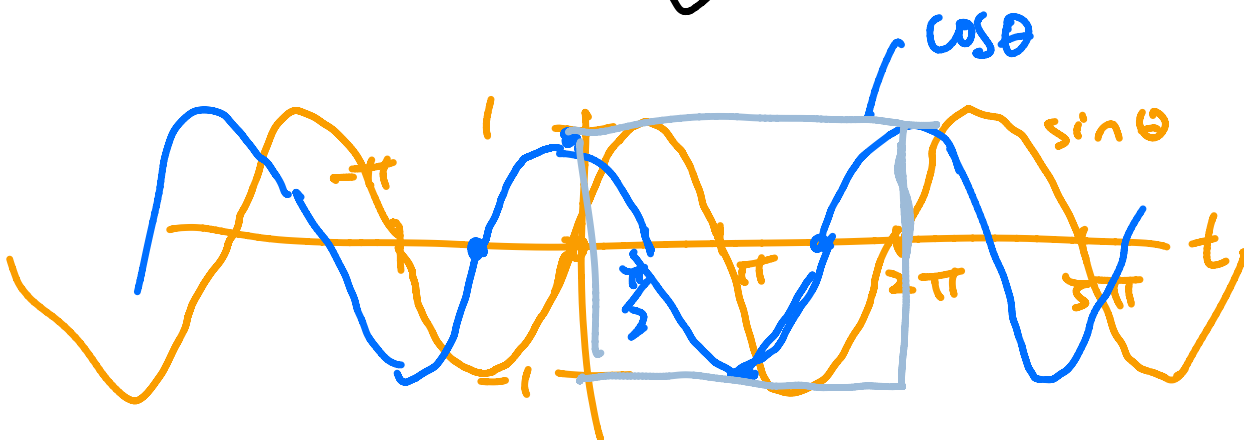
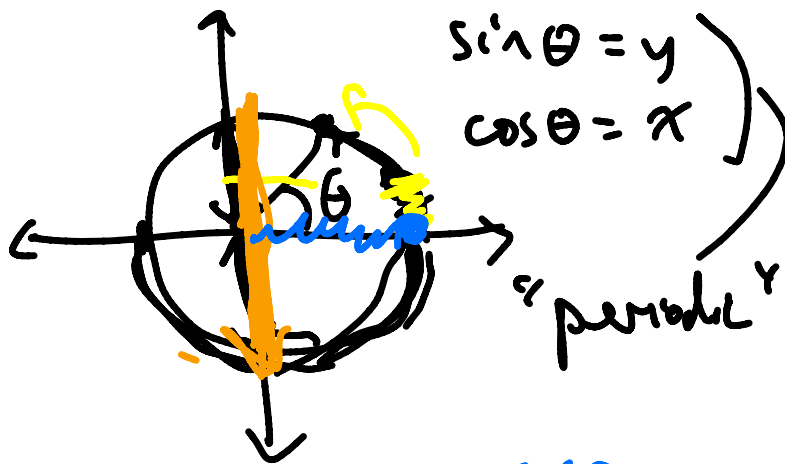


$$\sin\left(-\frac{\pi}{2}\right) = -1$$

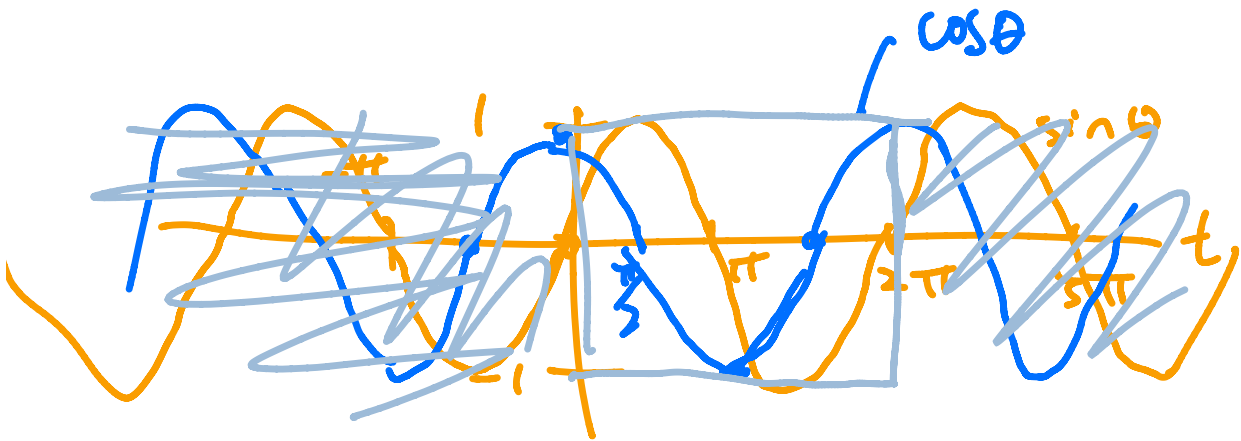
$$\cos\left(-\frac{\pi}{2}\right) = 0$$

$$\sin\left(\frac{3\pi}{2}\right) = -1$$

$$\cos\left(\frac{3\pi}{2}\right) = 0$$



sliding viewing window.



$$\sin \theta = y$$

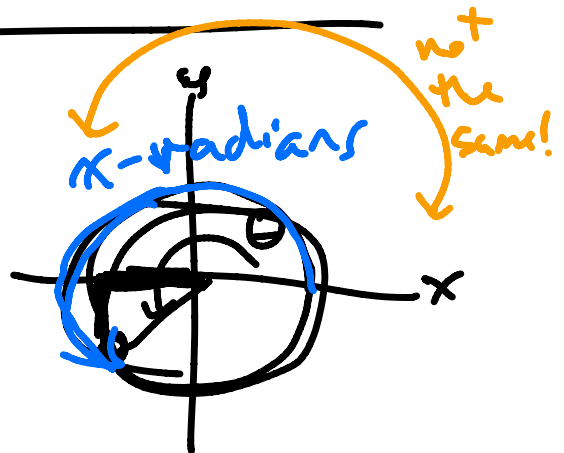
$$\cos \theta = x$$

$$\boxed{\theta \rightarrow t}$$

$\Downarrow$

$$\sin t = y$$

$$\cos t = x$$



$\leadsto \theta \rightarrow t \rightarrow x$

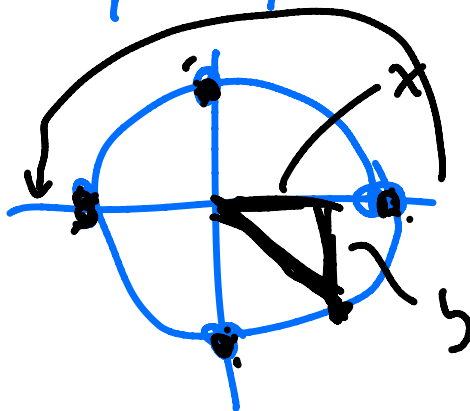
$$\sin x = \text{appr. } y$$

$$\cos x = \text{appr. } x$$

these
 x 's are not the
 same!



$$\sin x, \cos x, \tan x = \frac{\sin x}{\cos x}$$



$$\cos 0 = 1 \quad \left| \quad \sin 0 = 0 \right.$$

$$\vdots \quad \left| \quad \vdots \right.$$

Exponential fns.

$$x^2 \rightarrow 2^x$$

poly.
 growth

$$10^2 = 10 \cdot 10 = 100$$

$$100^2 = 100 \cdot 100 = 10,000$$

$$10,000^2 = 100 \text{ million, etc}$$

$$2^{10} = 2 \cdot 2 \cdot 2 \cdots 2 = 1024$$

$\underbrace{\hspace{1.5cm}}$
10

$$2^{100} = 2 \cdot 2 \cdot 2 \cdots 2$$

$\underbrace{\hspace{1.5cm}}$
100

$$(2^{10})^2 =$$

$$2^{20} \neq 2^{100}$$