

2/

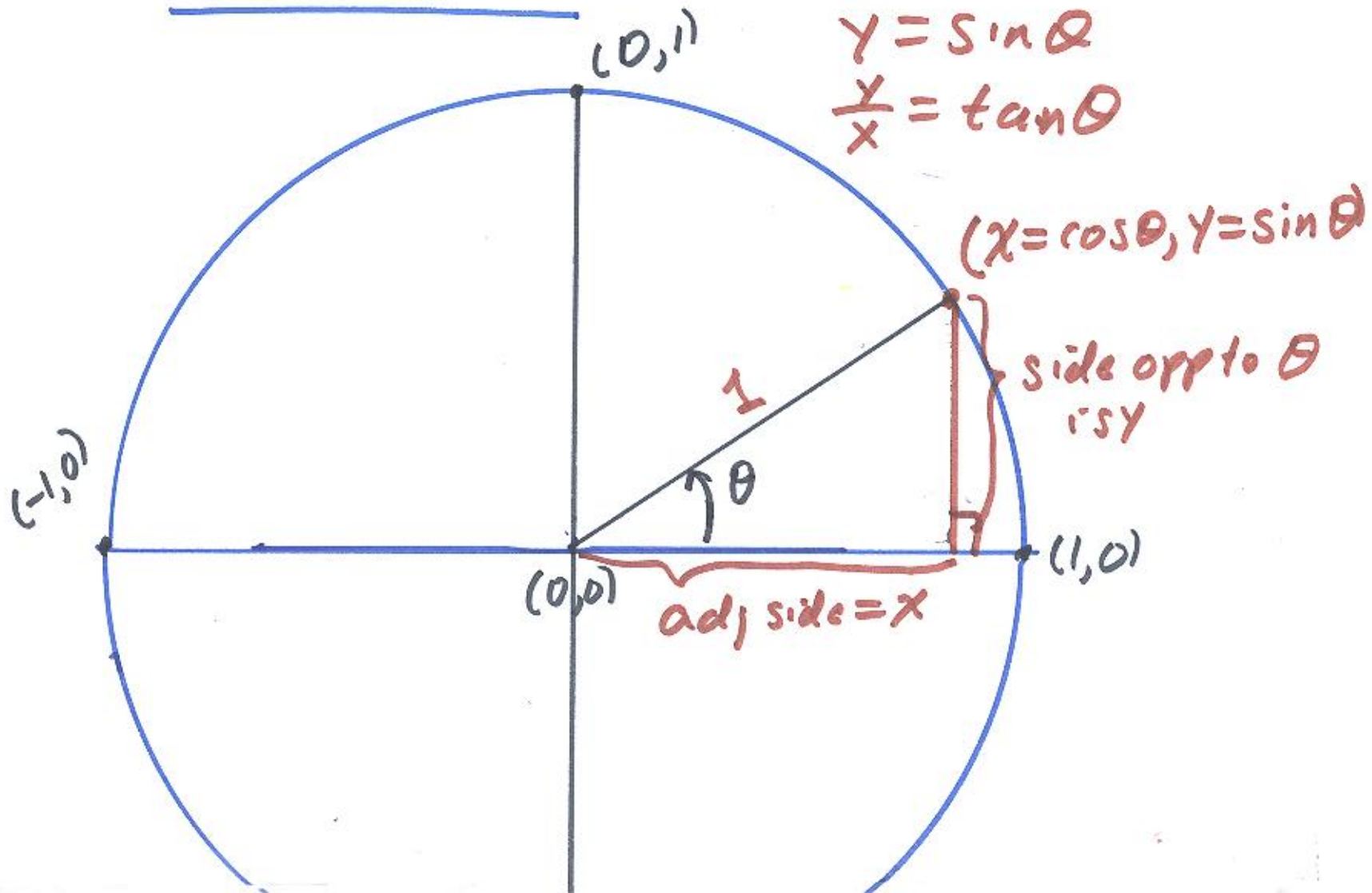
Extending sine & cosine
to any angle + or -

Unit Circle

$$x = \cos \theta$$

$$y = \sin \theta$$

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



2/

$$\sin(\theta) = -.75$$

$$\cos(\theta) > 0$$

$$\theta = \underline{\underline{-48.5904}} \quad \text{D.O.}$$

$$\cos(\theta) = 0.6614$$

$$\sin(\theta) = -.7500$$

$$\tan(\theta) = -1.1339$$

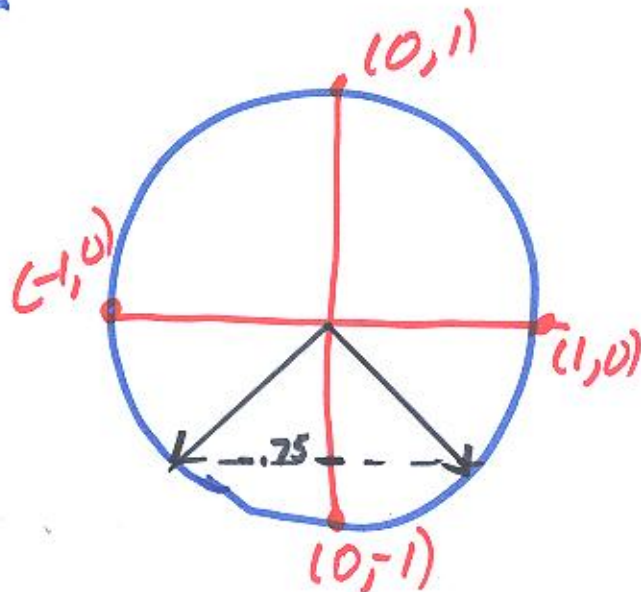
$$\cot(\theta) = -0.8819$$

$$\sec(\theta) = 1.5119$$

$$\csc(\theta) = -1.3333$$

$$\underline{\underline{\text{PMS}}}$$

$$\underline{\underline{-48^{\circ}35'25''}}$$



\sin^{-1} (number between 0 and 1)
= positive first Quad &

\sin^{-1} (number between -1 and 0) = negative 4th Quad &

3)

$$\tan(\theta) = 1.53 \text{ and}$$

θ is in third Quadrant

$$\theta = \underline{\underline{236.8316^\circ}}$$

$$\underline{\underline{\text{DMS}}}$$

$$\underline{\underline{236^\circ 49' 54''}}$$

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

$$\sin(\theta) = -0.8371$$

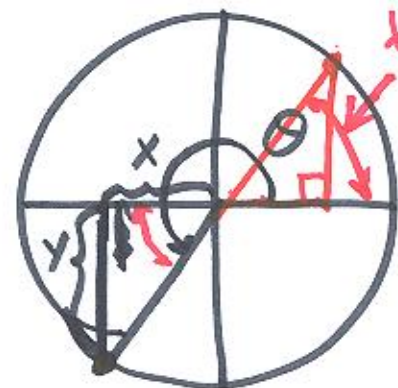
$$\cos(\theta) = -0.5471$$

$$\tan(\theta) = 1.5300$$

$$\cot(\theta) = 0.6536$$

$$\sec(\theta) = -1.8279$$

$$\csc(\theta) = -1.1946$$



$\tan^{-1}(\text{positive number})$
 = Positive Quad I &
 $\tan^{-1}(\text{negative number})$
 = negative 4th Quad &

$$4/ \quad \cos(\theta) = 0.65 \quad \text{and} \quad \sin(\theta) < 0$$

$$\theta = \frac{\text{D.O.}}{310.5416^\circ}$$

$$\frac{\text{DMS}}{310^\circ 32' 30''}$$

$$\cos(\theta) = 0.6500$$

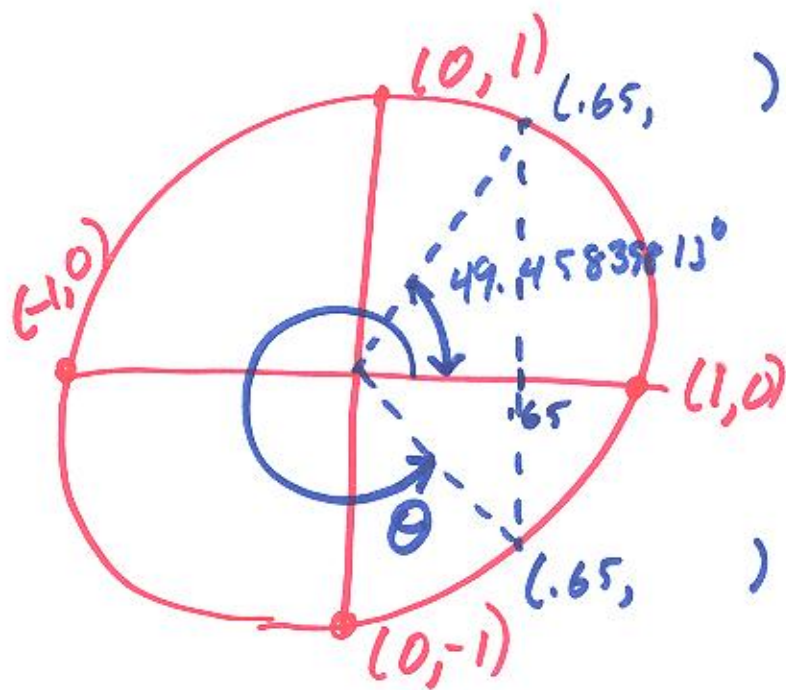
$$\sin(\theta) = -0.7599$$

$$\tan(\theta) = -1.1691$$

$$\sec(\theta) = 1.5385$$

$$\csc(\theta) = -1.3159$$

$$\cot(\theta) = -0.8553$$



\cos^{-1} (positive number)
= 1st Quad \nexists
 \cos^{-1} (negative number)
= 2nd Quad \nexists

5/ Prob 4 on Quiz

$$\tan \theta = .75 \quad \text{and} \quad \cos(\theta) < 0$$

DMS

$$\theta = \frac{00}{\underline{216.8699^\circ}}$$

$$\underline{216^\circ 52' 12''}$$

$$\cos(\theta) = -.8000$$

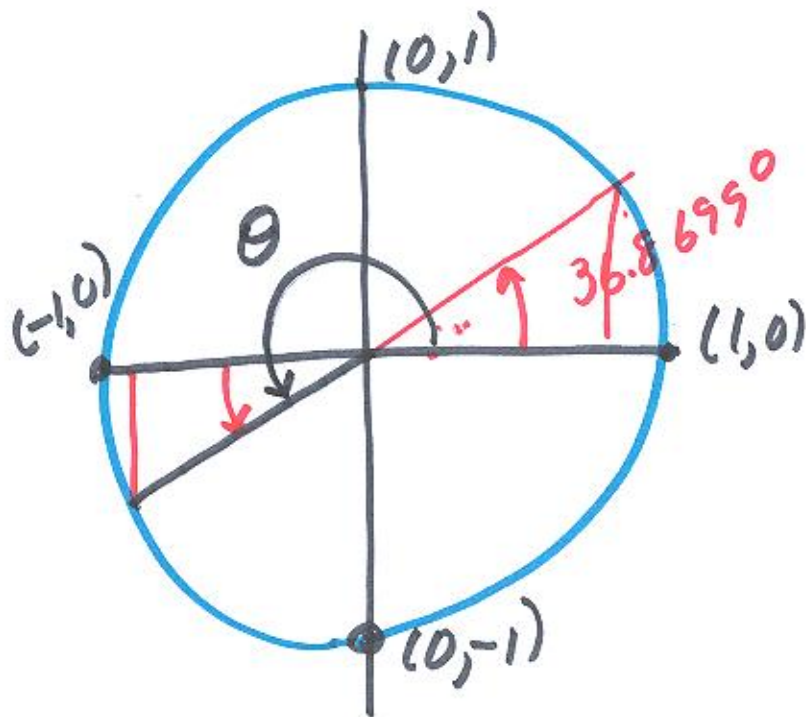
$$\sin(\theta) = -.60000$$

$$\tan(\theta) = .7500$$

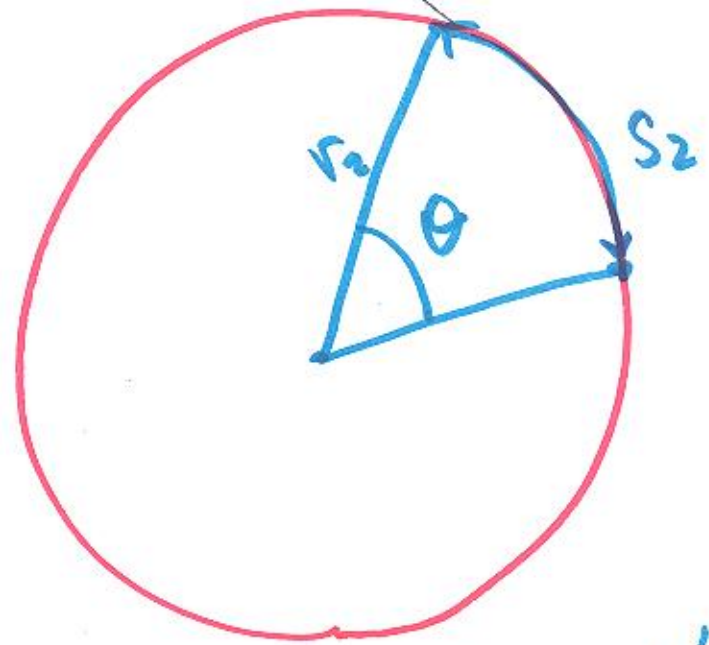
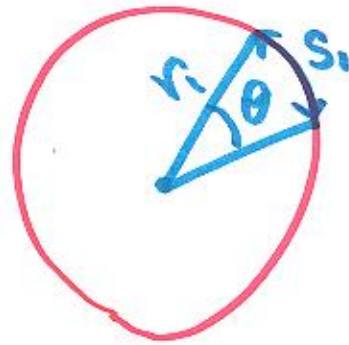
$$\cot(\theta) = 1.3333$$

$$\sec(\theta) = -1.2500$$

$$\csc(\theta) = -1.6667$$



6/ Babel
Babe 1



$$\frac{s_2}{r_2} = \frac{s_1}{r_1} \text{ if angle's match}$$

$$\theta_{(r)} = \frac{\text{arclength}}{\text{radius}}$$