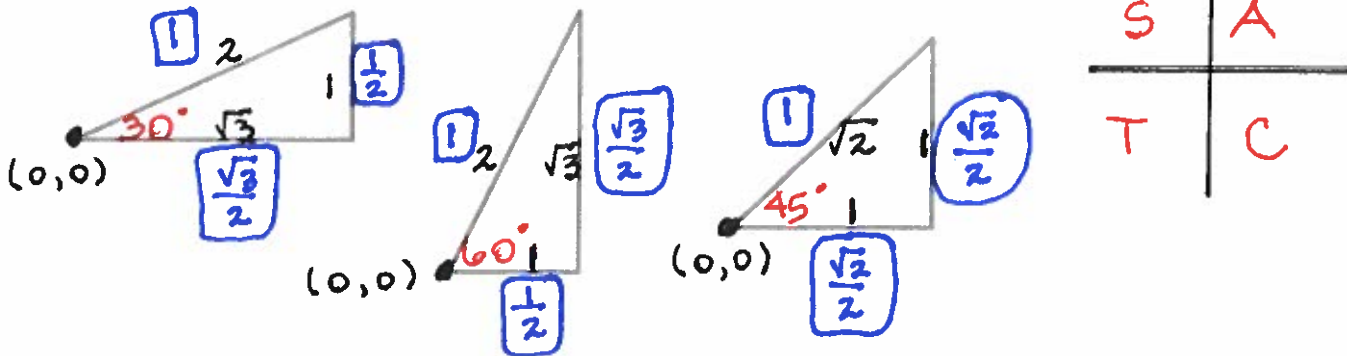


Unit 8 Notes Objective 4 – Solving for Angles

You're going to need all the tools you've acquired so far in this unit: SohCahToa



**Part 1 – the easier part** Indicate the possible quadrants in which the terminating ray for  $\theta$  could lie

**A.  $\cos \theta < 0$**

Q's II III

**B.  $\sin \theta < 0$**

Q's III IV

**C.  $\tan^2 \theta < 0$**

nowhere

**D.  $\sin^2 \theta > 0$**

All 4 Q's

**Part 2 – the tougher part** Solve for values of  $\theta$  such

that  $0 \leq \theta \leq 360^\circ$

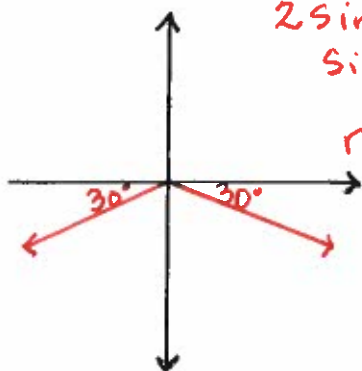
**A.  $2\sin\theta + 1 = 0$**

$$\frac{2\sin\theta + 1 = 0}{-1 \quad -1}$$

$$2\sin\theta = -1$$

$$\sin\theta = -\frac{1}{2}$$

Q's III IV  
 ref =  $30^\circ$



$\theta = 210^\circ$   
 $\theta = 330^\circ$

**B.  $6\cos\theta + 3\sqrt{2} = 0$**

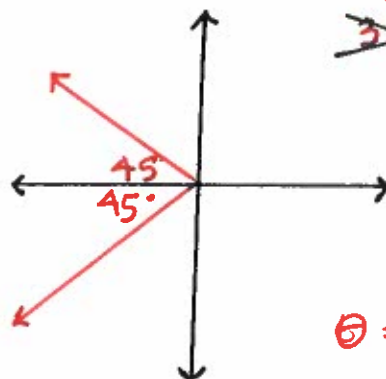
$$3(2\cos\theta + \sqrt{2}) = 0$$
~~$$3 + 0$$~~

$$2\cos\theta + \sqrt{2} = 0$$

$$2\cos\theta = -\sqrt{2}$$

$$\cos\theta = -\frac{\sqrt{2}}{2}$$

Q's II III  
 ref =  $45^\circ$



$\theta = 135^\circ$   
 $\theta = 225^\circ$

**C.**  $3\tan^2\theta - 1 = 0$

$$\frac{\quad +1 \quad +1}{3\tan^2\theta = 1}$$

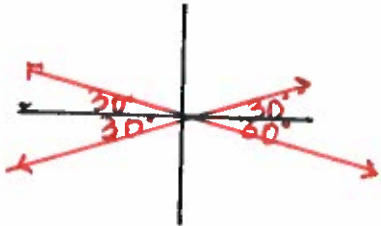
$$\tan^2\theta = \frac{1}{3}$$

$$\sqrt{\quad} \quad \sqrt{\quad}$$

$$\tan\theta = \pm \frac{1}{\sqrt{3}}$$

$$\tan\theta = \pm \frac{\sqrt{3}}{3}$$

ref =  $30^\circ$  All 4 Q's



$$\theta = 30^\circ, 150^\circ, 210^\circ, 330^\circ$$

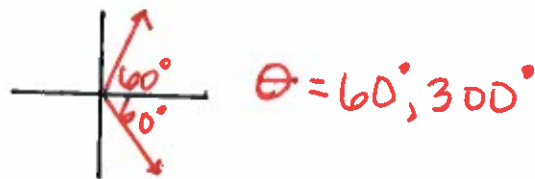
**D.**  $(2\cos\theta - 1)(\tan\theta + 1) = 0$

$$2\cos\theta - 1 = 0$$

$$2\cos\theta = 1$$

$$\cos\theta = \frac{1}{2}$$

$$\text{ref} = 60^\circ$$



$$\tan\theta + 1 = 0$$

$$\tan\theta = -1$$

Q's

II IV

$$\text{ref} = 45^\circ$$



$$\theta = 135^\circ, 315^\circ$$