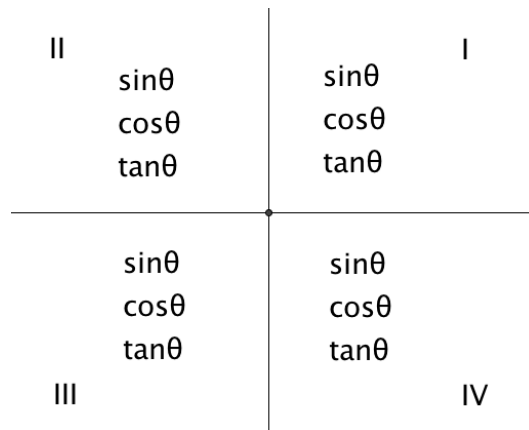
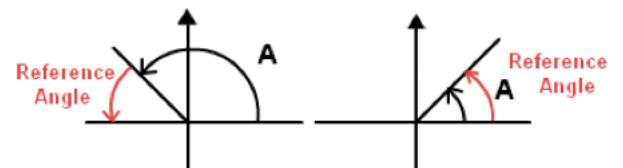
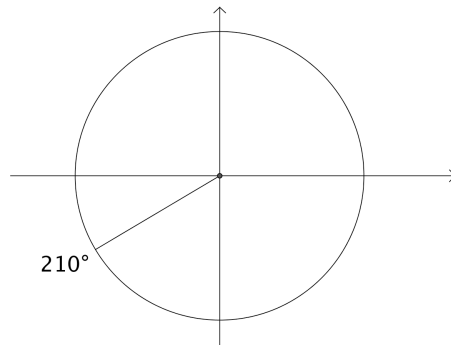


7-4a Reference Angles and Trig Functions

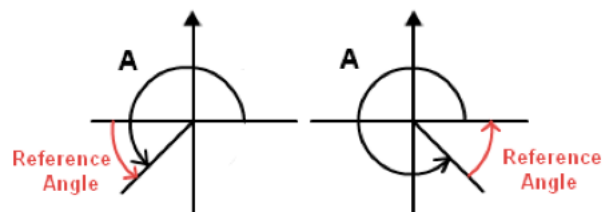
1. Determine whether the sign should be + or – for the trig functions listed in the respective quadrants.



2. Which angles will have the same value as  $|\sin 210^\circ|$ ? That is  $\sin(?) = \pm \sin 210^\circ$

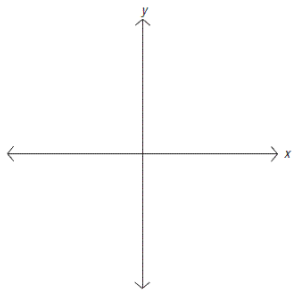


The **reference angle** of any angle is the positive, acute angle formed by the x-axis and the terminal side of the angle.

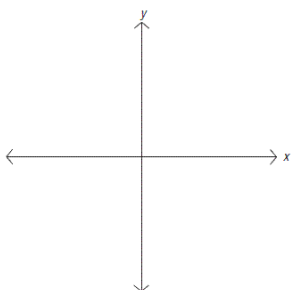


Find the reference angles  $\theta$ . Sketch each angle on the axes provided.

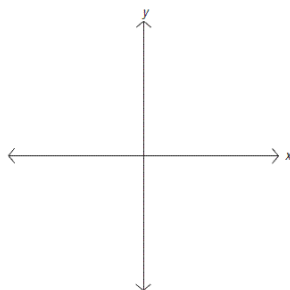
3.  $\theta = 330^\circ$



4.  $\theta = 240^\circ$

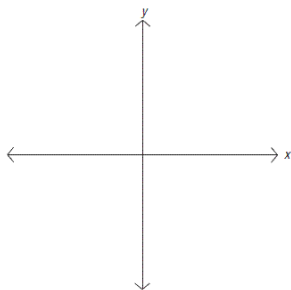


5.  $\theta = 2.1 \text{ rad}$

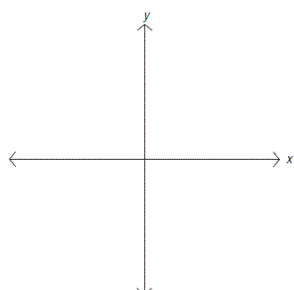


Use reference angles to evaluate the following EXACTLY (NO CALC)

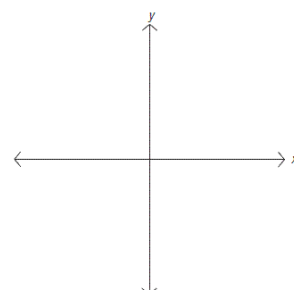
6.  $\sin -\frac{2\pi}{3}$



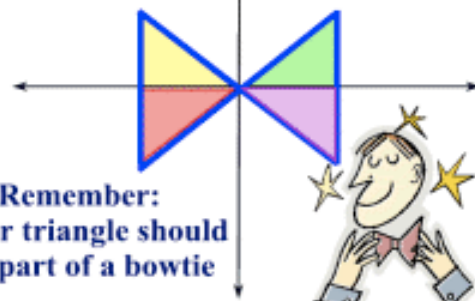
7.  $\sin \frac{11\pi}{3}$



8.  $\tan 240^\circ$



**Reference triangles are drawn to the x-axis.**



9. Use your calculator to approximate 2 values of  $\theta$ , where  $0 \leq \theta \leq 2\pi$

a.  $\sin \theta = -0.453$

b.  $\cos \theta = .556$

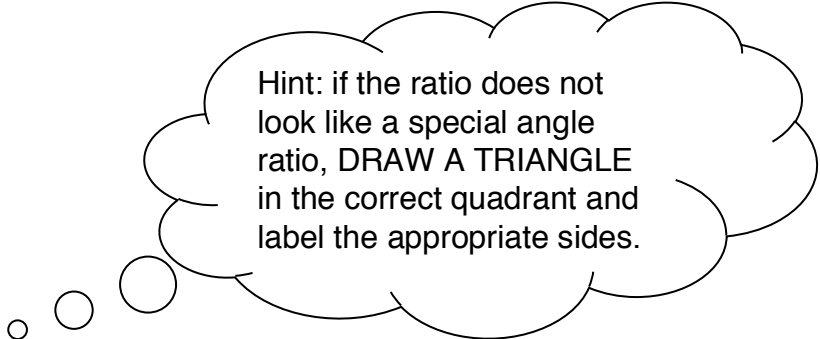
Note: Your calculator gives you one angle. You have to use your BRAIN to find the other one...

c.  $\cos \theta = -.015$

d.  $\tan \theta = -0.839$

10. Find the values of  $\sin \theta$  and  $\cos \theta$  using the functional value and the constraint provided.

Given:  $\tan \theta = -1/3$        $\cos \theta > 0$



Hint: if the ratio does not look like a special angle ratio, DRAW A TRIANGLE in the correct quadrant and label the appropriate sides.

QUICK!! REPLICATE THE UNIT CIRCLE FROM MEMORY ...

