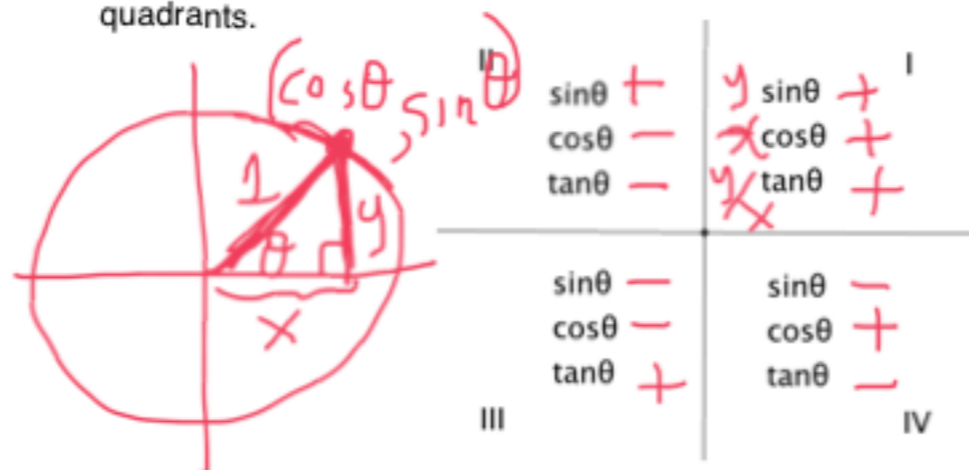
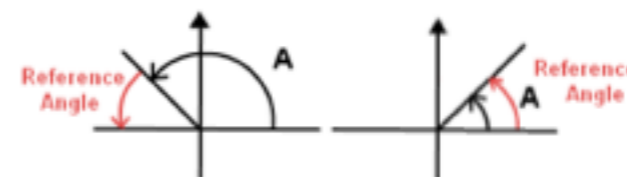
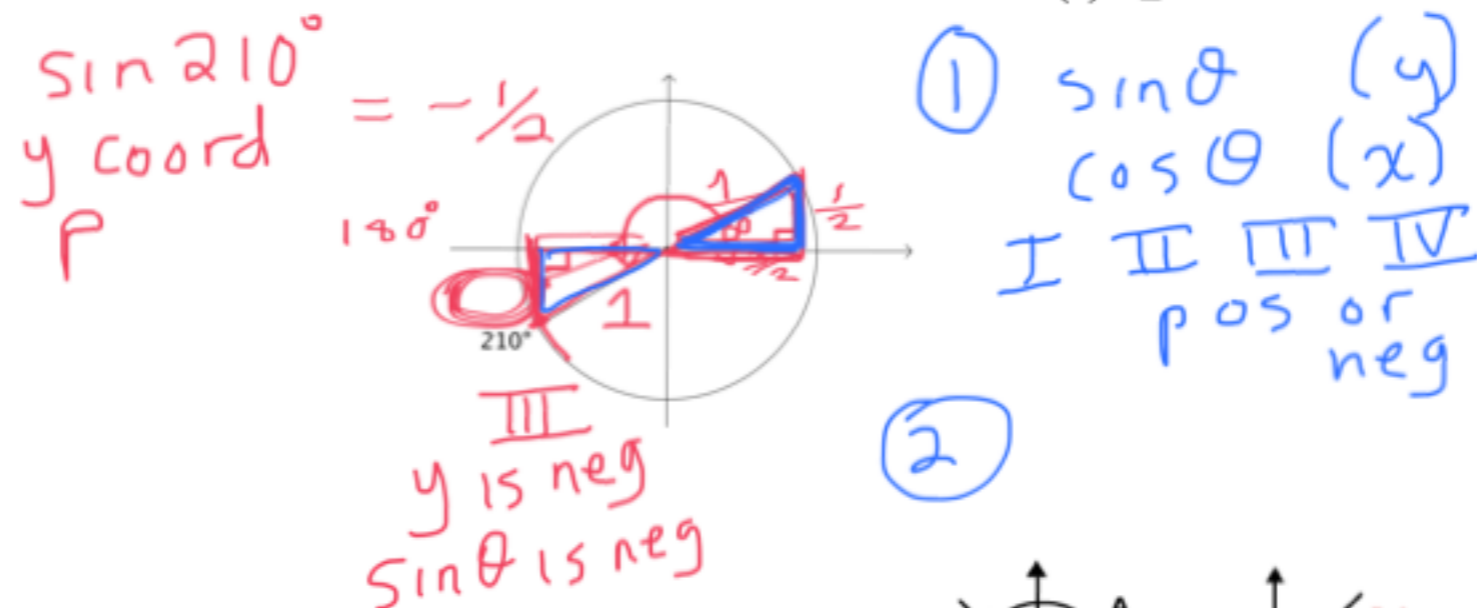


7-4a Reference Angles and Trig Functions

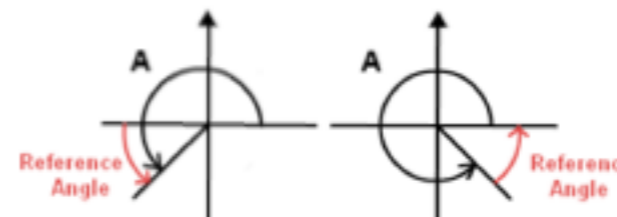
1. Determine whether the sign should be + or - for the trig functions listed in the respective quadrants.



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

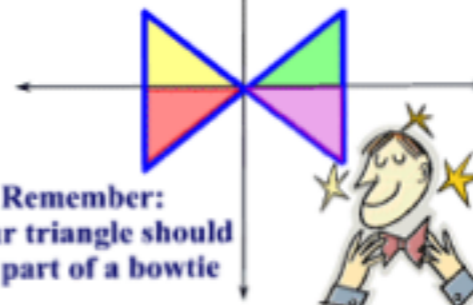


The **reference angle** of any angle is the positive, acute angle formed by the x-axis and the terminal side of the angle.



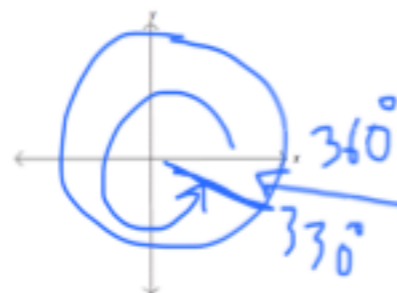
Find the reference angles θ . Sketch each angle on the axes provided.

Reference triangles are drawn to the x-axis.



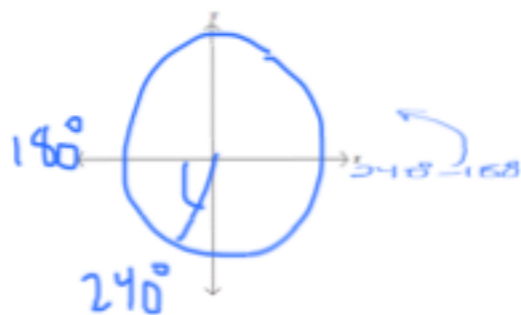
Remember: your triangle should be part of a bowtie

3. $\theta = 330^\circ$



30° pos, acute

4. $\theta = 240^\circ$



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



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

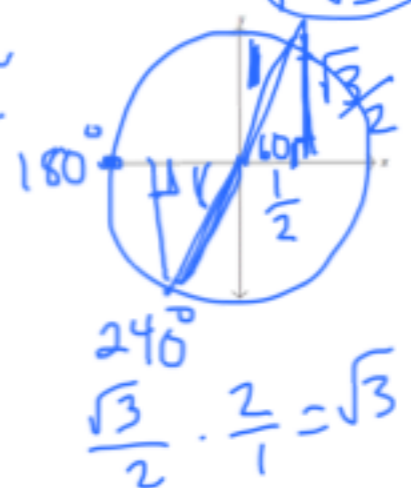
6. $\sin -\frac{2\pi}{3}$



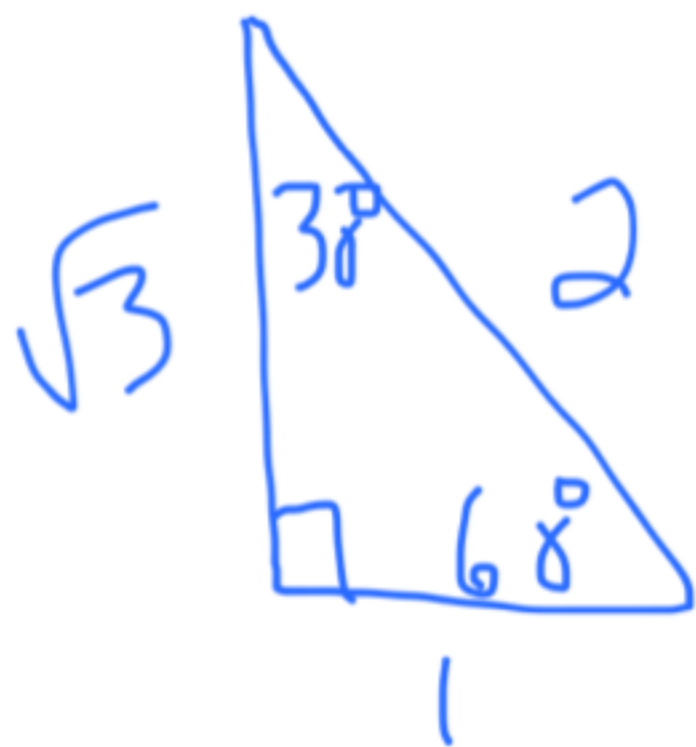
7. $\sin \frac{11\pi}{3}$



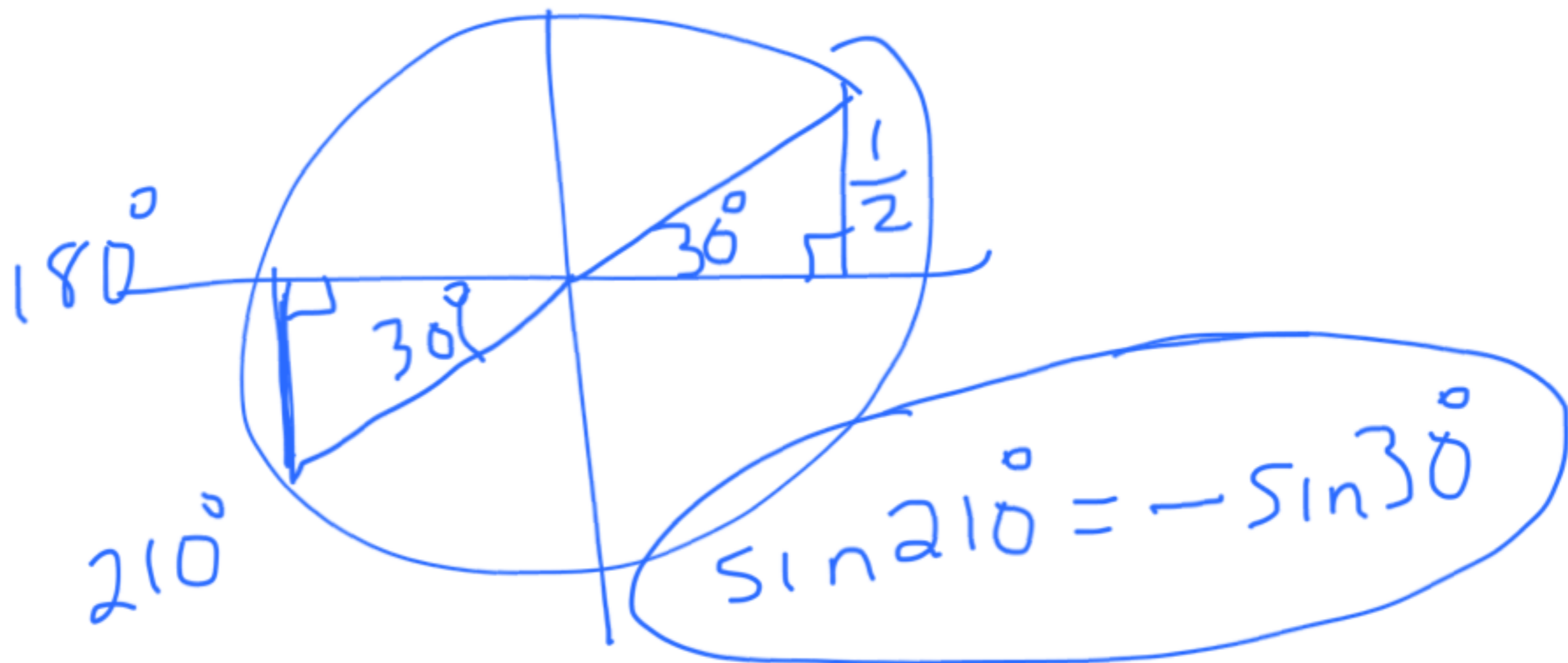
8. $\tan 240^\circ$



	30°	45°	60°
$\sin \theta$	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$
$\cos \theta$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$
$\tan \theta$	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$



Express $\sin 210^\circ = -\frac{1}{2}$
in terms of its
reference angle



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

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 ...

