

BELL ACTIVITY: Give unknown measures of the triangles:

1

$45^\circ$



1

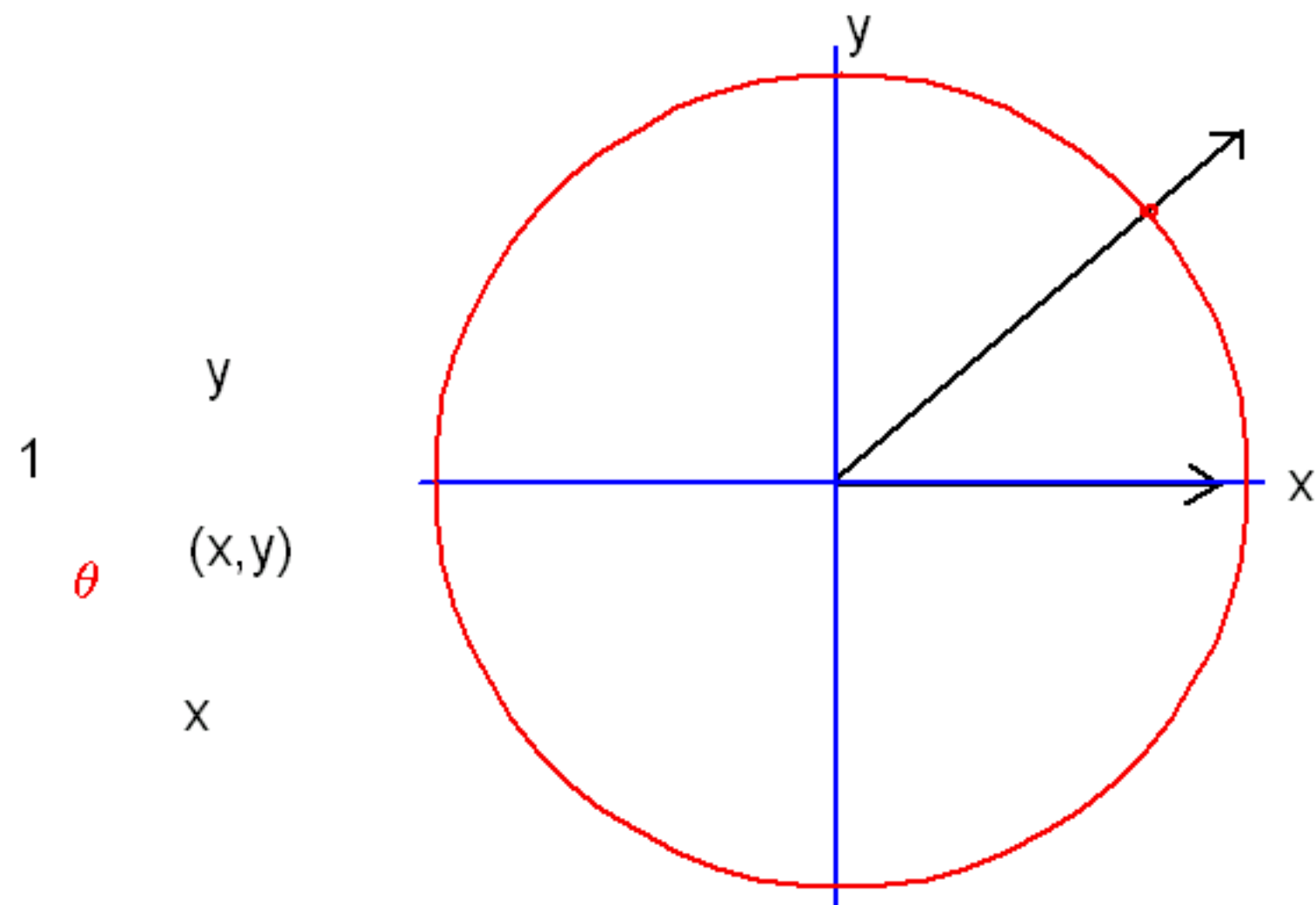


$60^\circ$

## Trig Lesson 5.3--The Unit Circle

NOW...on to the unit circle...an AMAZING tool that we will use [all semester](#) to learn trig

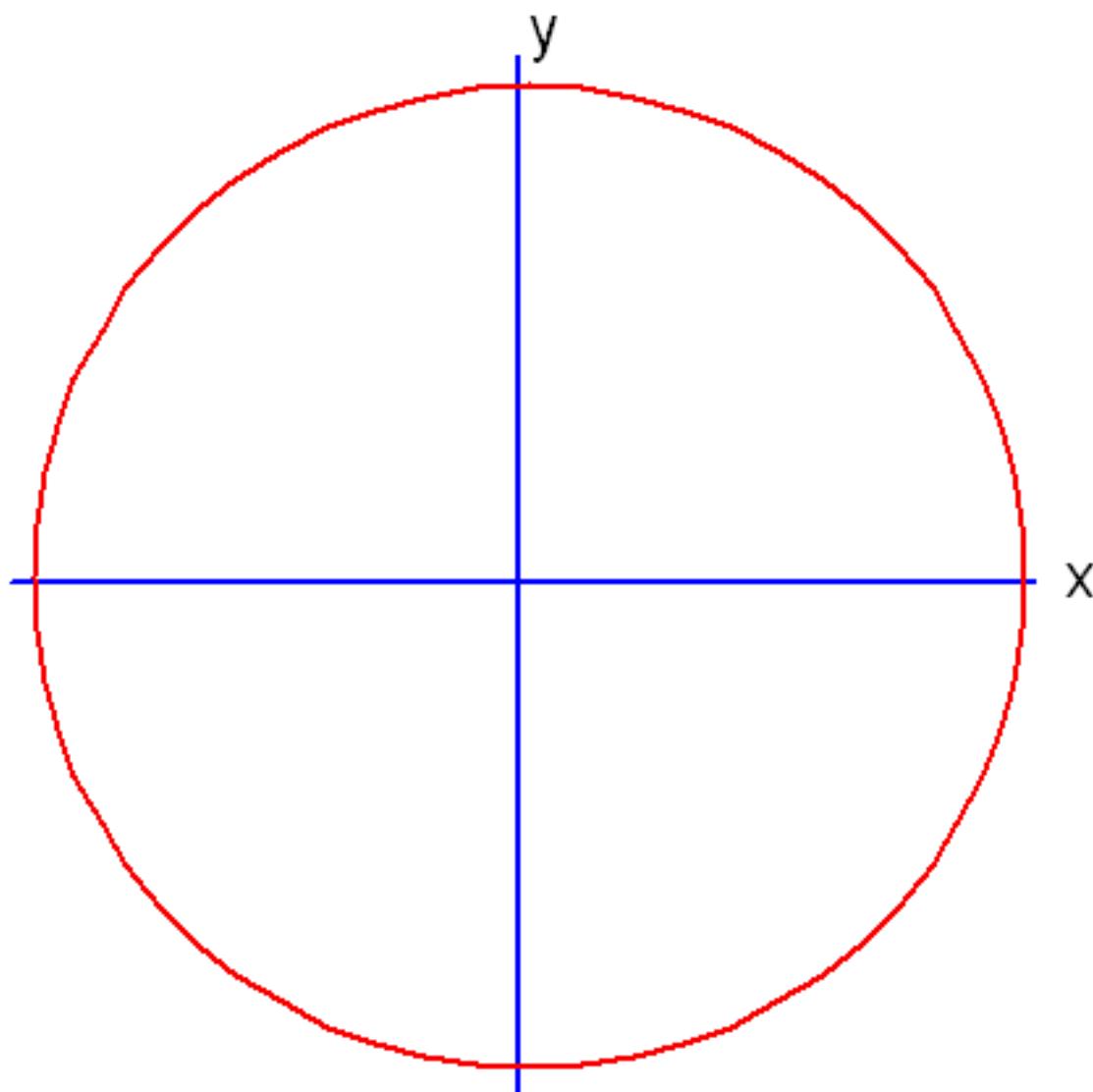
If you take a circle with radius **1 unit** and place it on the xy coordinate plane you have what we call the "**unit circle**"



Let's see how this works with some familiar angles and triangles!

$$\sin 30^\circ = \underline{\hspace{2cm}}$$

$$\cos 30^\circ = \underline{\hspace{2cm}}$$



*ALWAYS draw the triangle to the X-AXIS!*

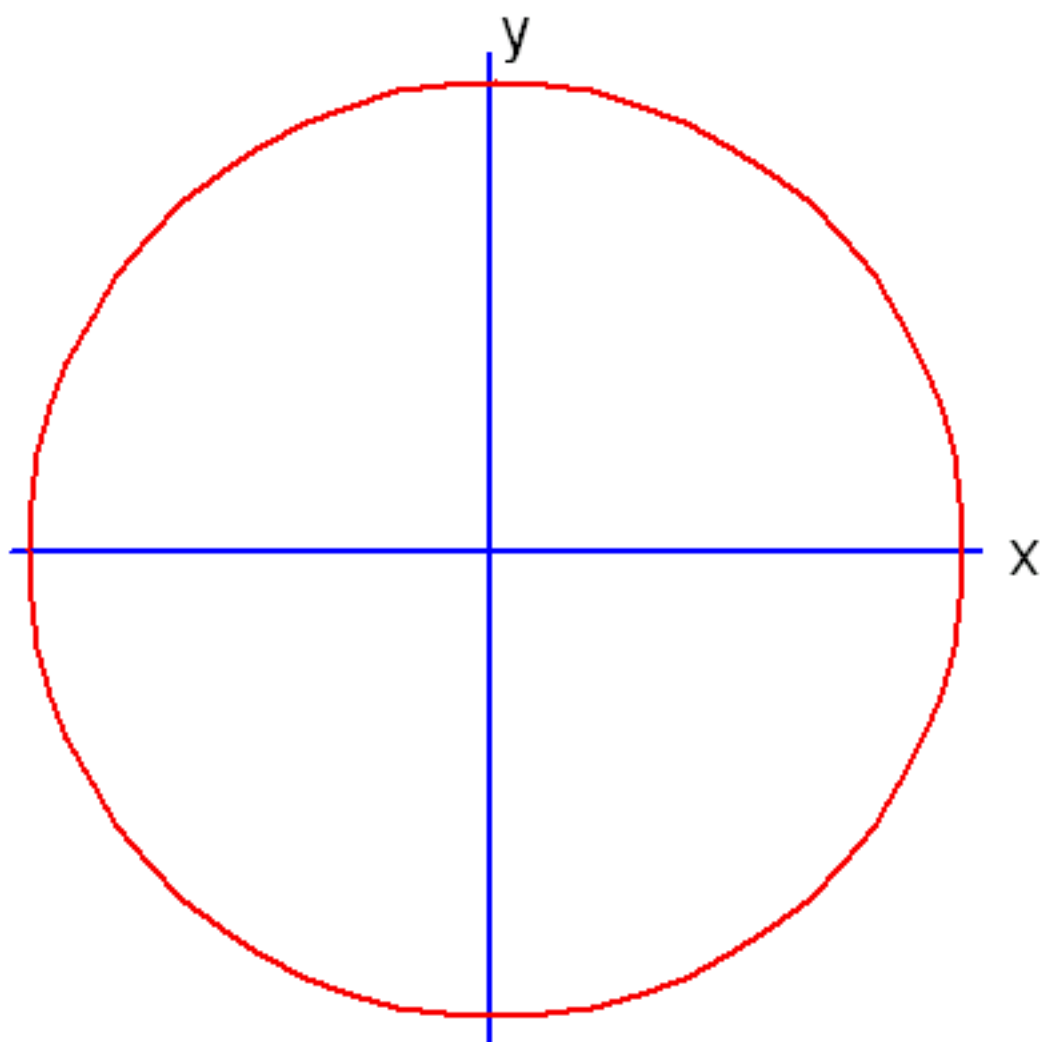
Always write the ordered pair on your circle...I want to see it!

calculator

Let's see how this works with some familiar angles and triangles!

$$\sin 45^\circ = \underline{\hspace{2cm}}$$

$$\cos 45^\circ = \underline{\hspace{2cm}}$$



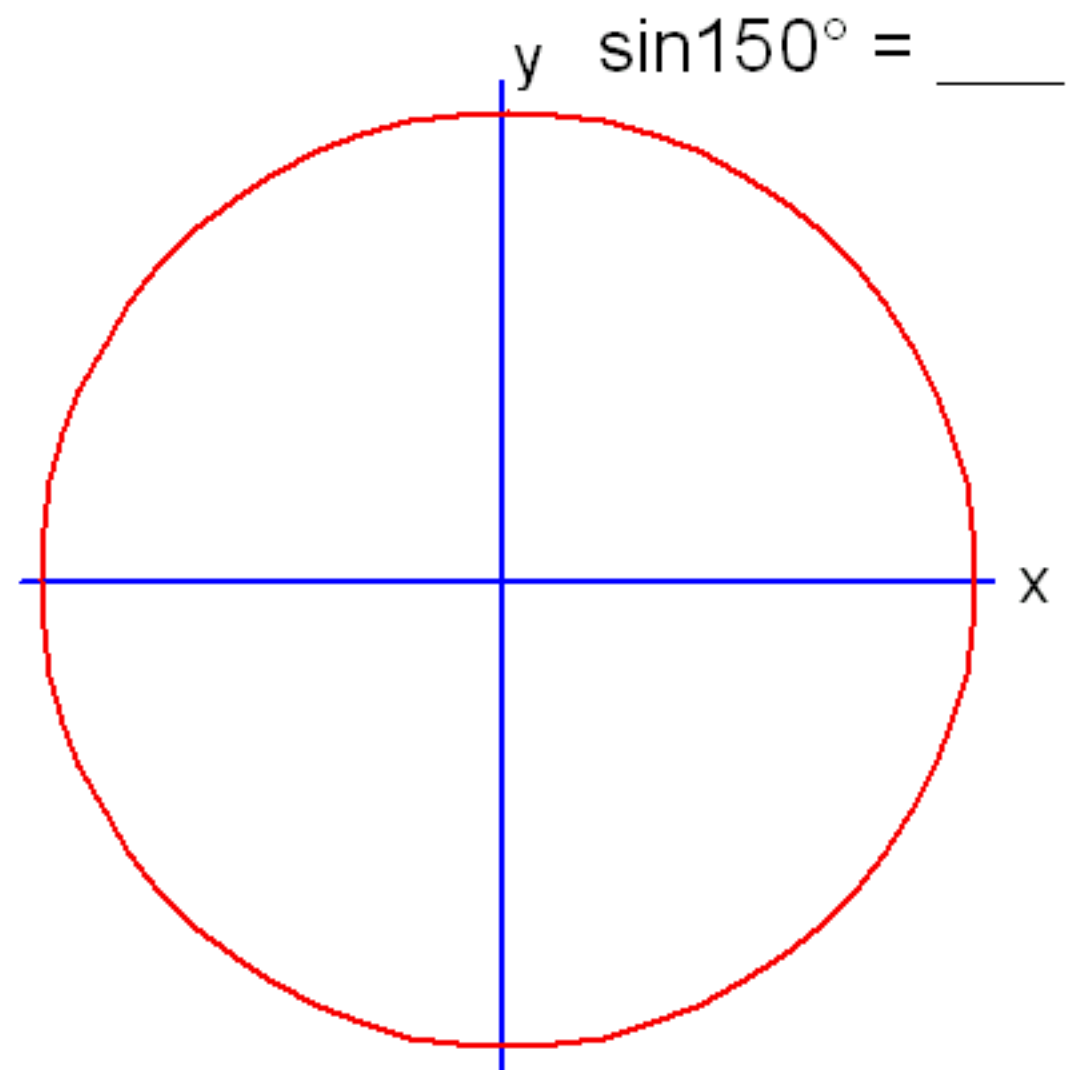
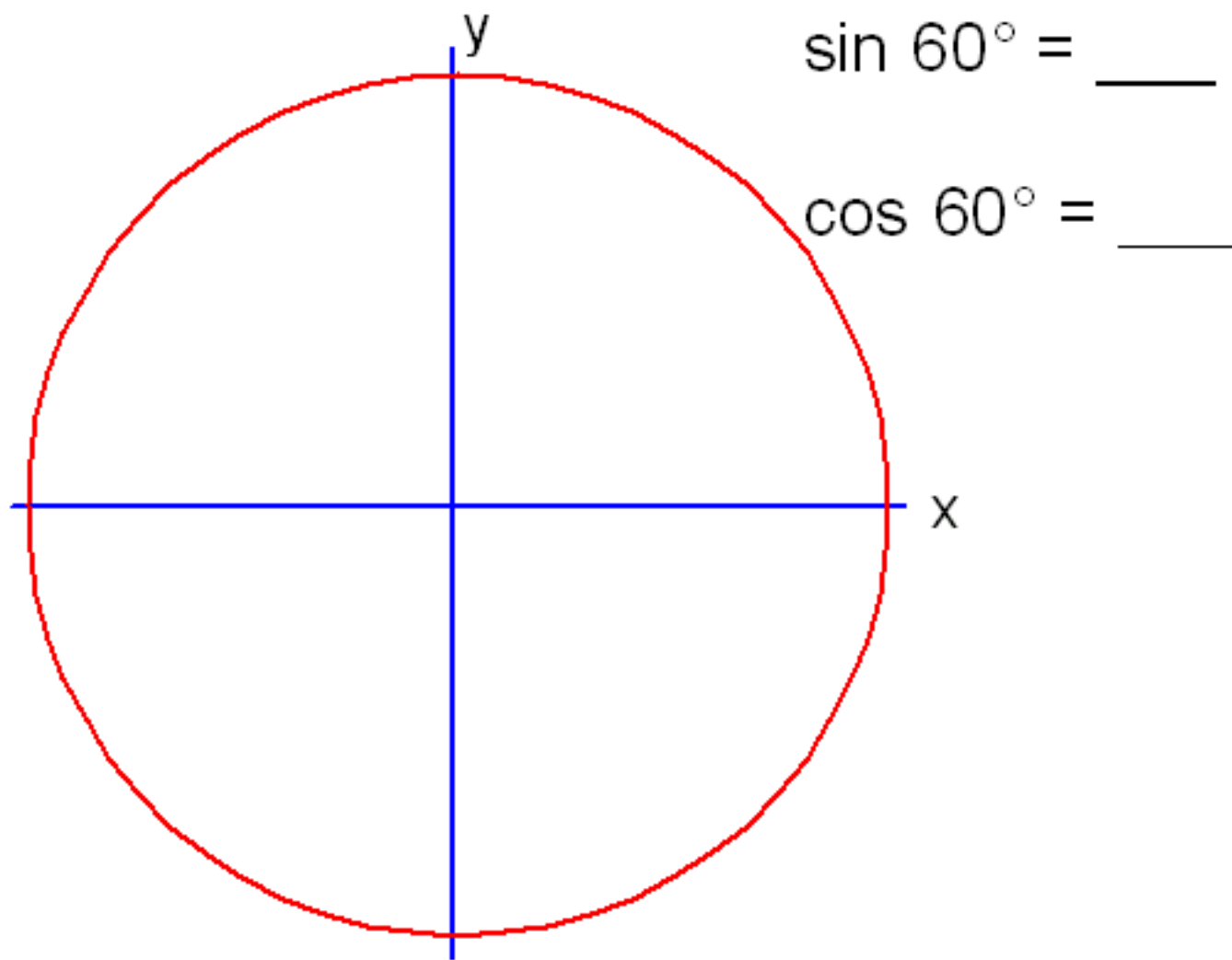
*ALWAYS draw the triangle to the X-AXIS!*

Always write the ordered pair on your circle...I want to see it!

**Hey! Let's check these with a calculator..you do it...NOW!**

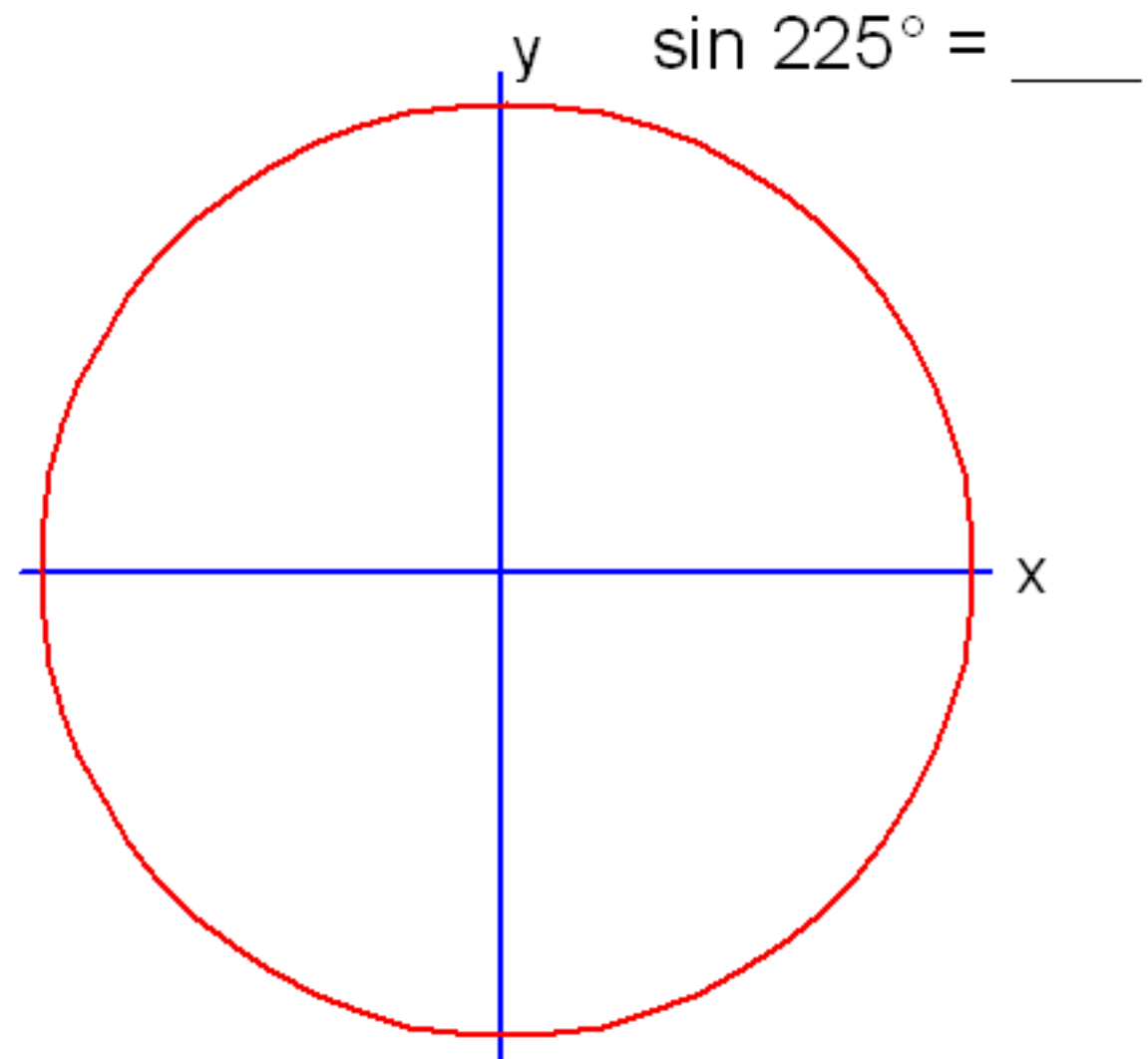
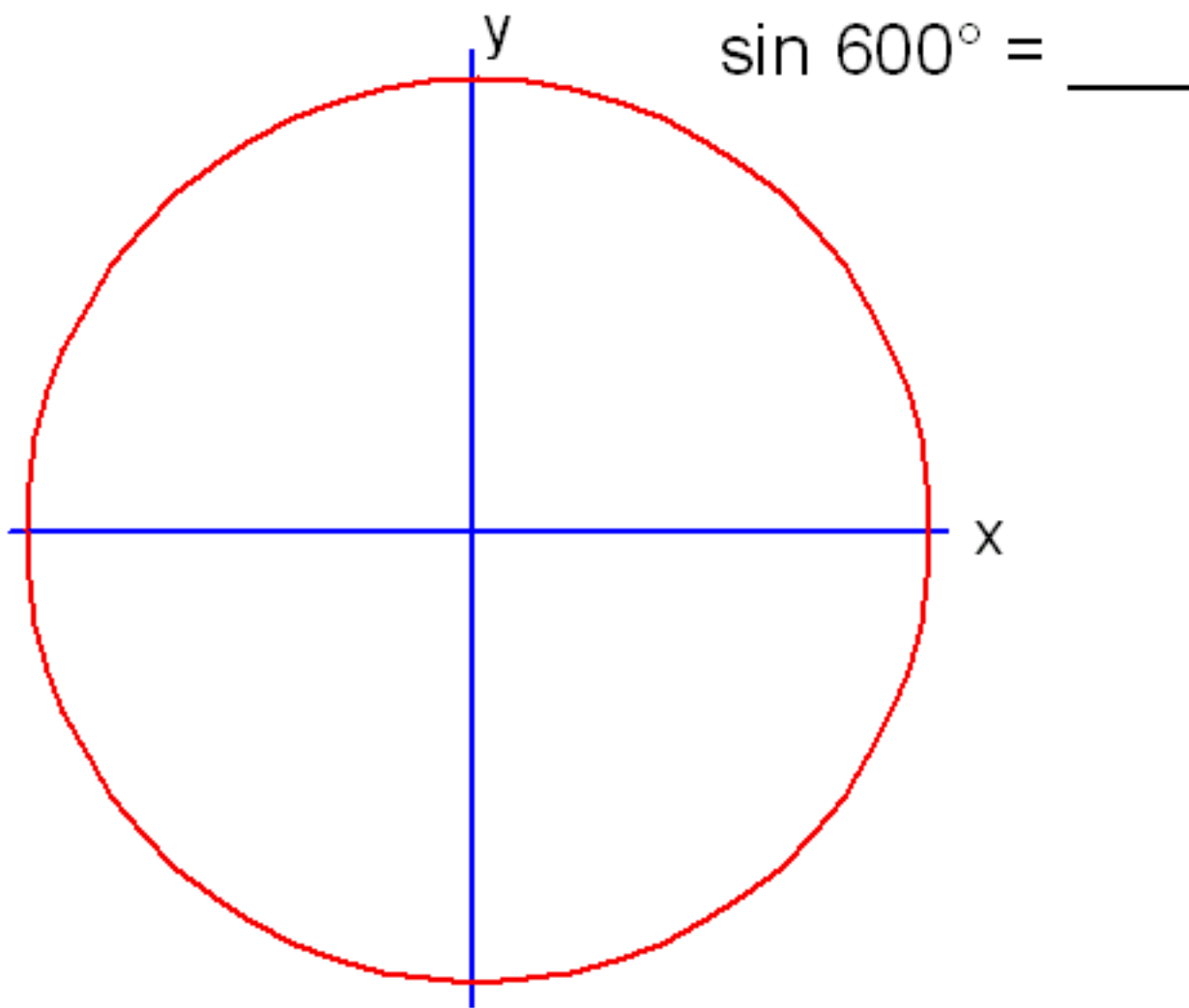
calculator

Always write the ordered pair on your circle...I want to see it!

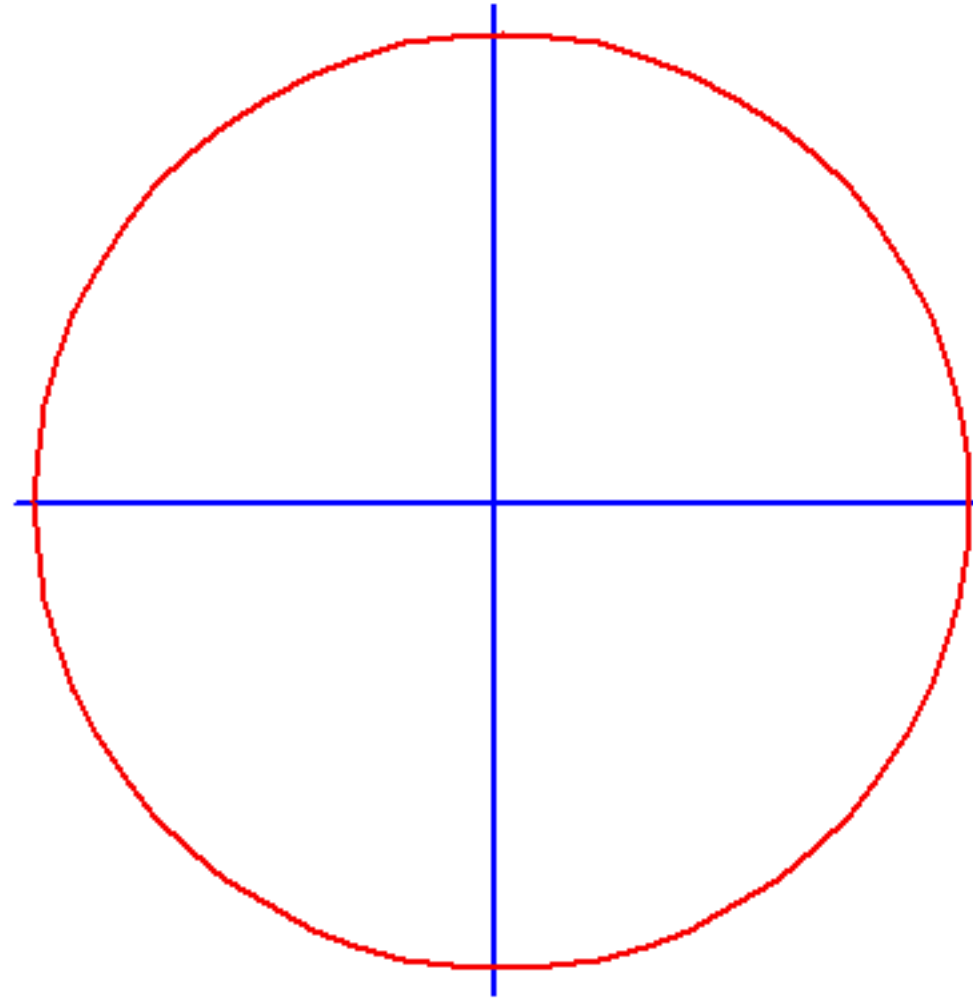


Whoa! This one is not acute!  
What WILL we do?!

Always write the ordered pair on your circle...I want to see it!



What about  $\tan\theta$ ?

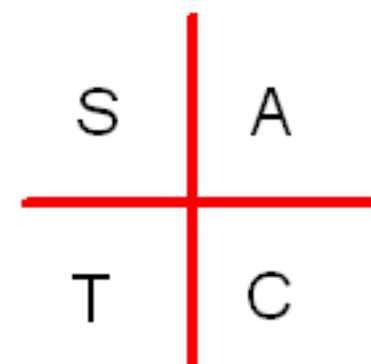
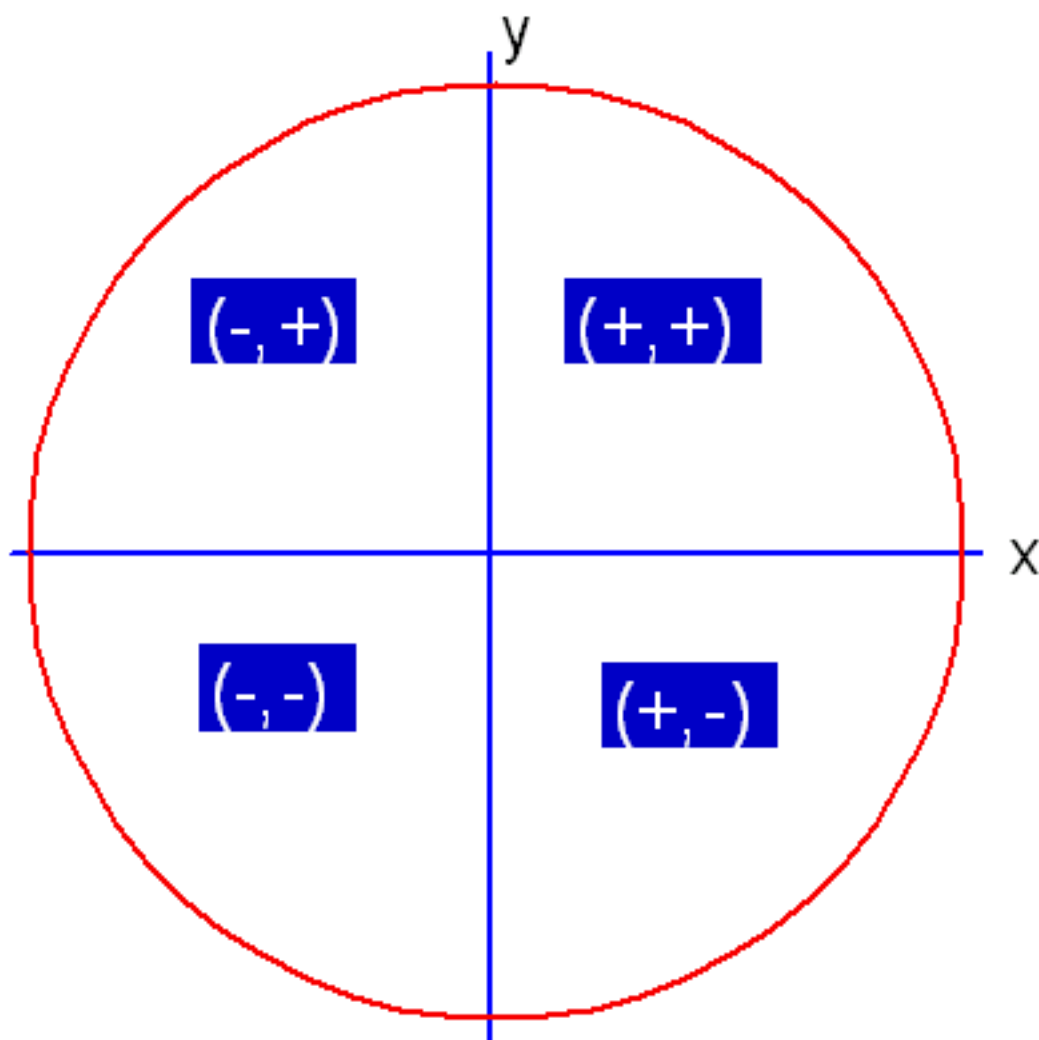


What about the  
reciprocal functions?

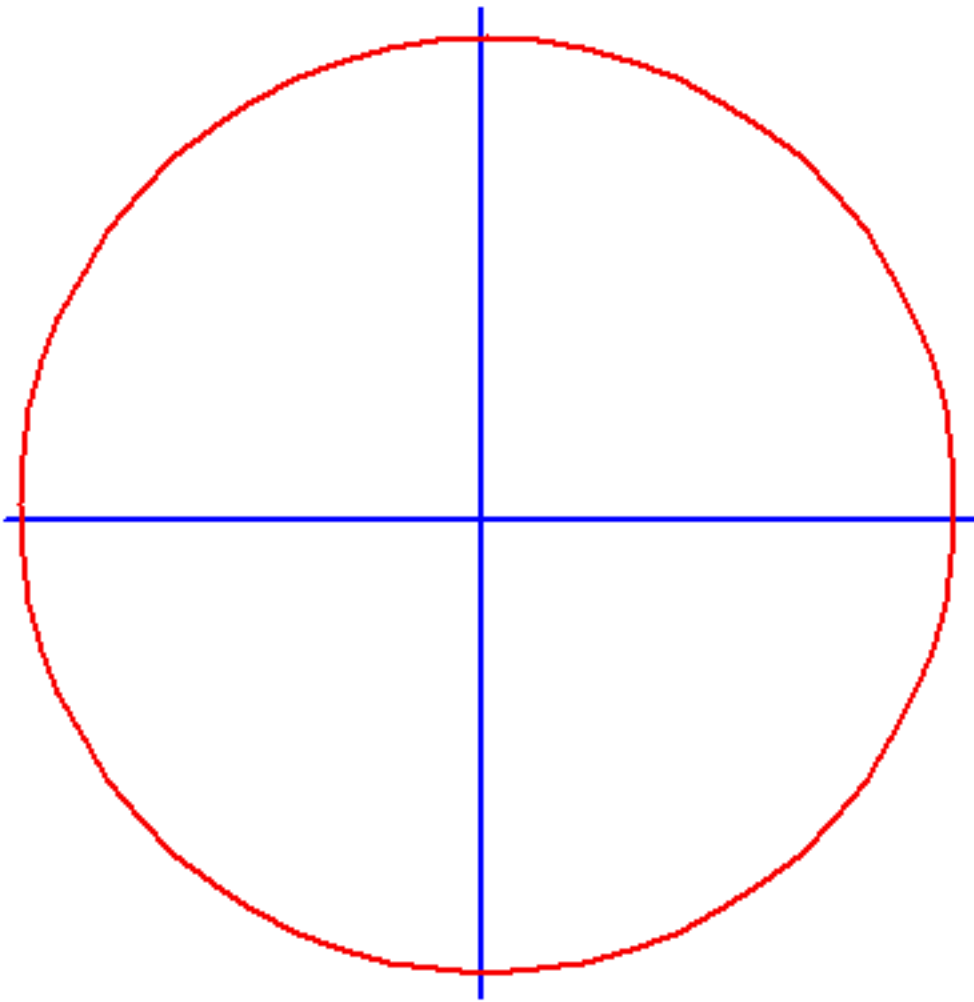
Don't memorize it...just think through it! (It's too much to memorize)

NOTICE the signs in each quadrant

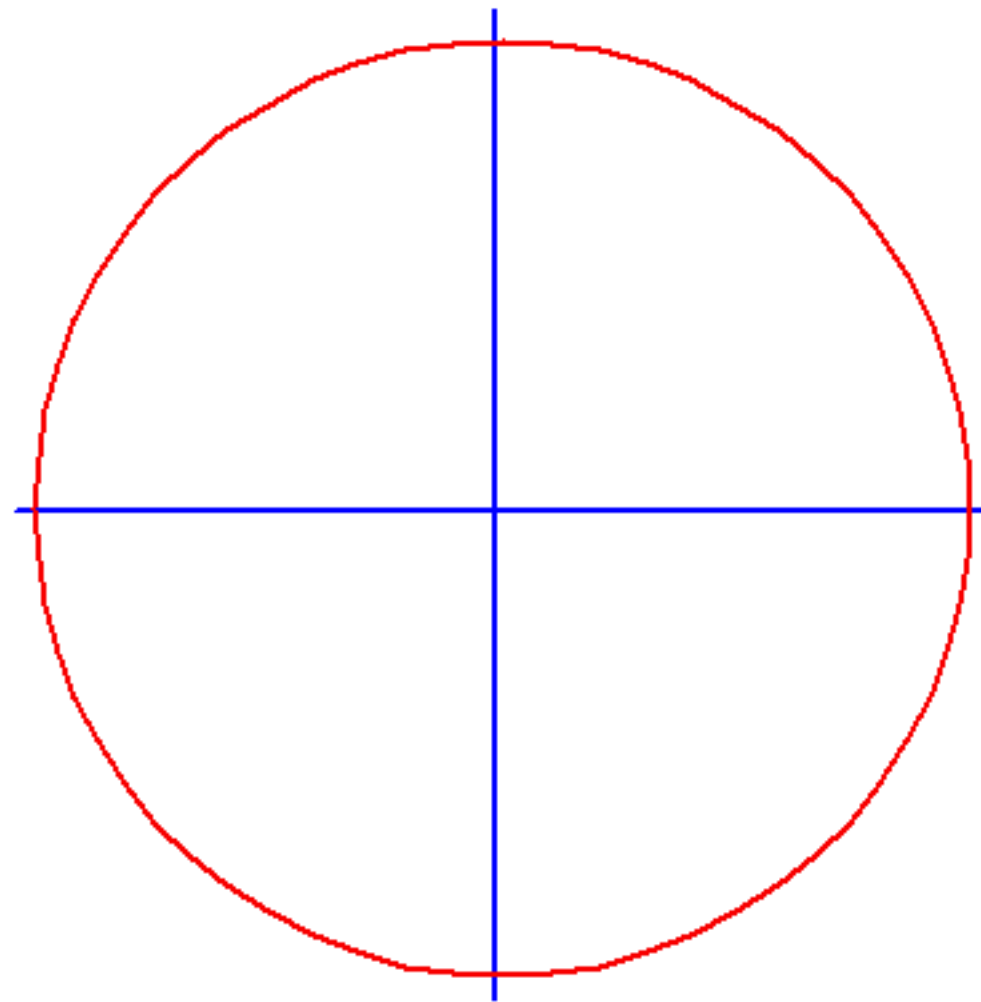
- A**ll
- S**tudents
- T**ake
- C**alculus



Always write the ordered pair on your circle...I want to see it!

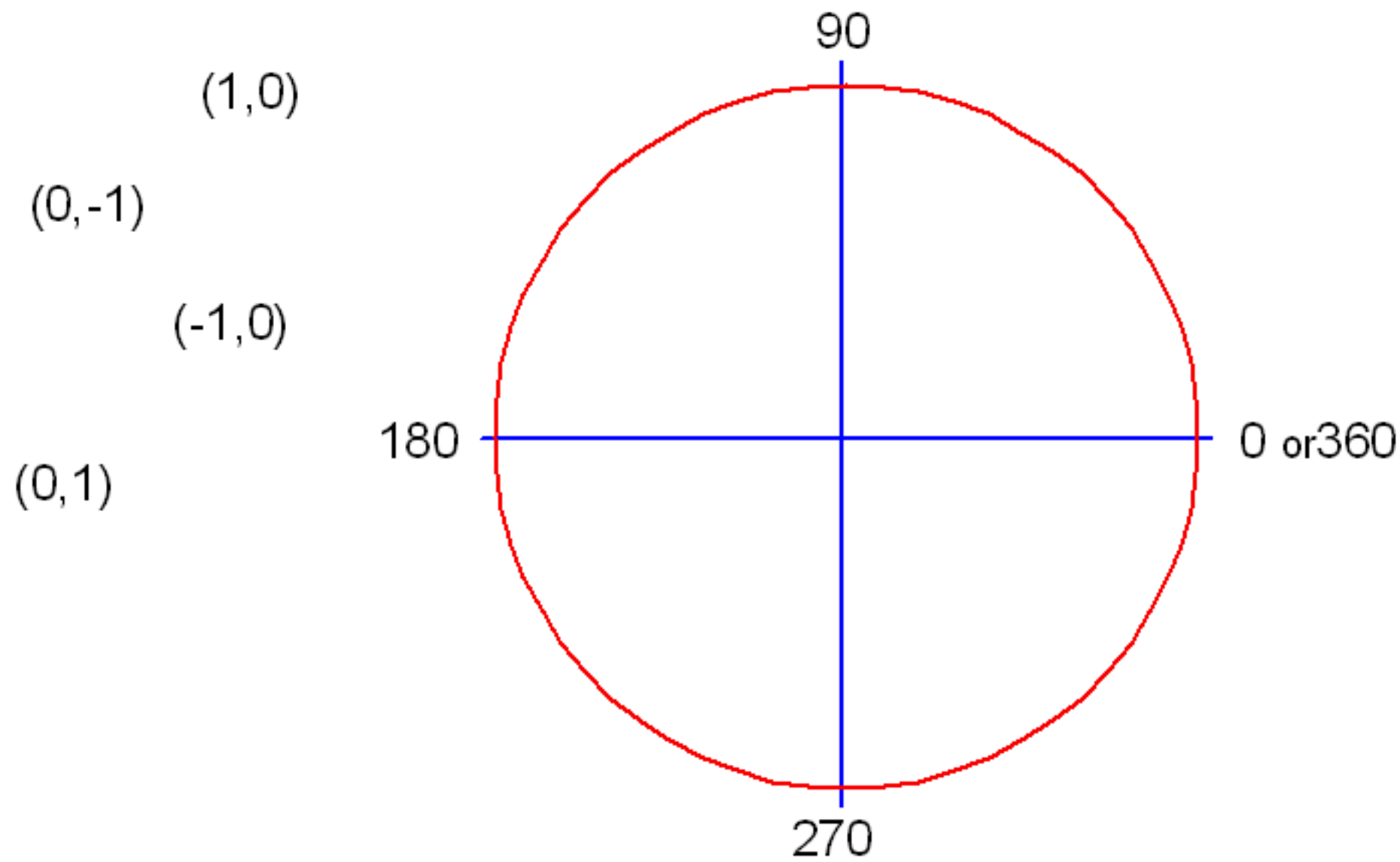


$$\tan(-135^\circ) = \underline{\hspace{2cm}}$$



$$\csc 660^\circ = \underline{\hspace{2cm}}$$

What about the QUADRANTAL angles?? ( $0^\circ, 90^\circ, 180^\circ, 270^\circ, 360^\circ$ )

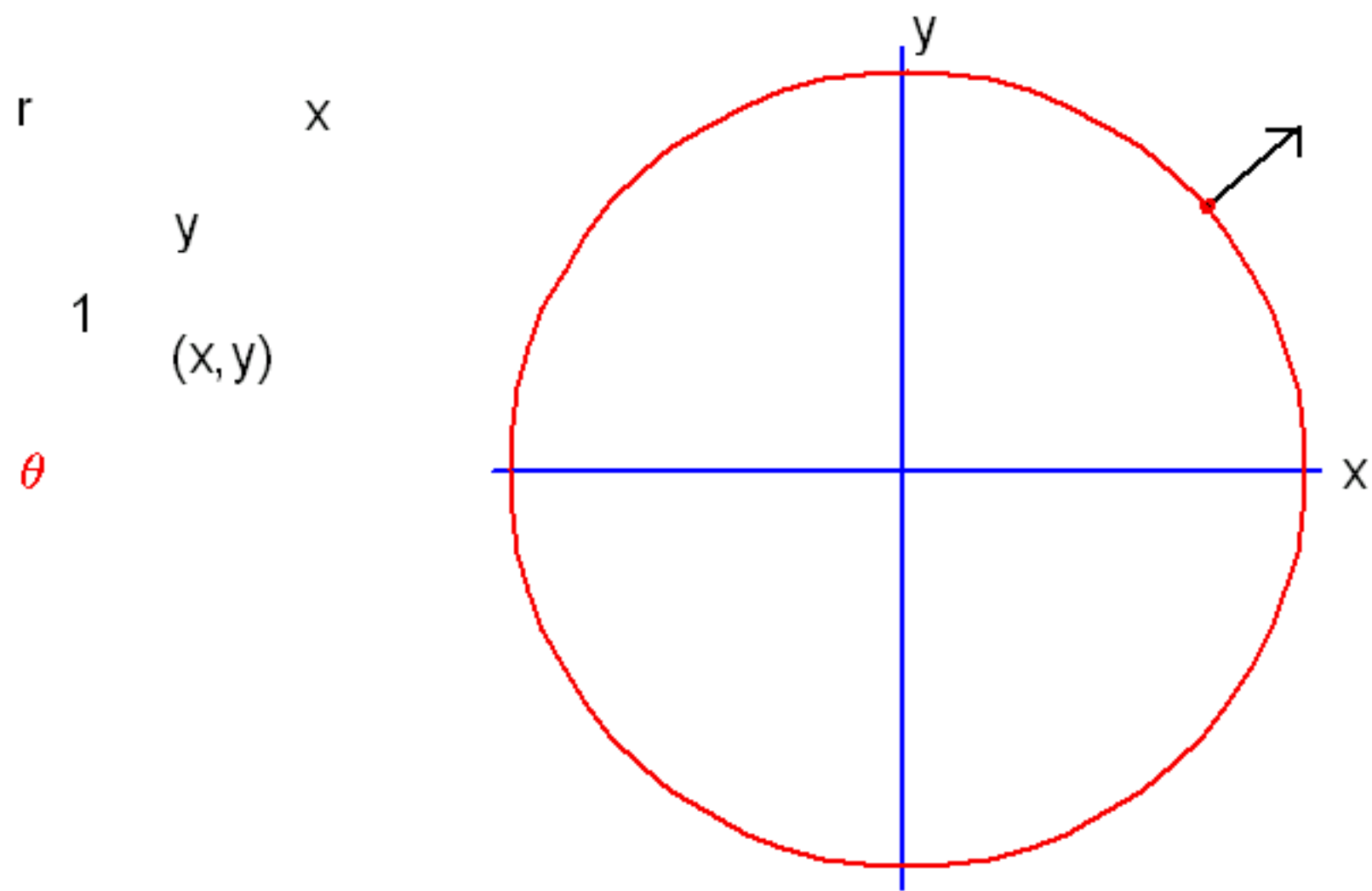


$\sin 90^\circ =$   
 $\cos 270^\circ =$   
 $\tan(-180^\circ) =$   
 $\csc 180^\circ =$   
 $\sec 360^\circ =$   
 $\cot 90^\circ =$

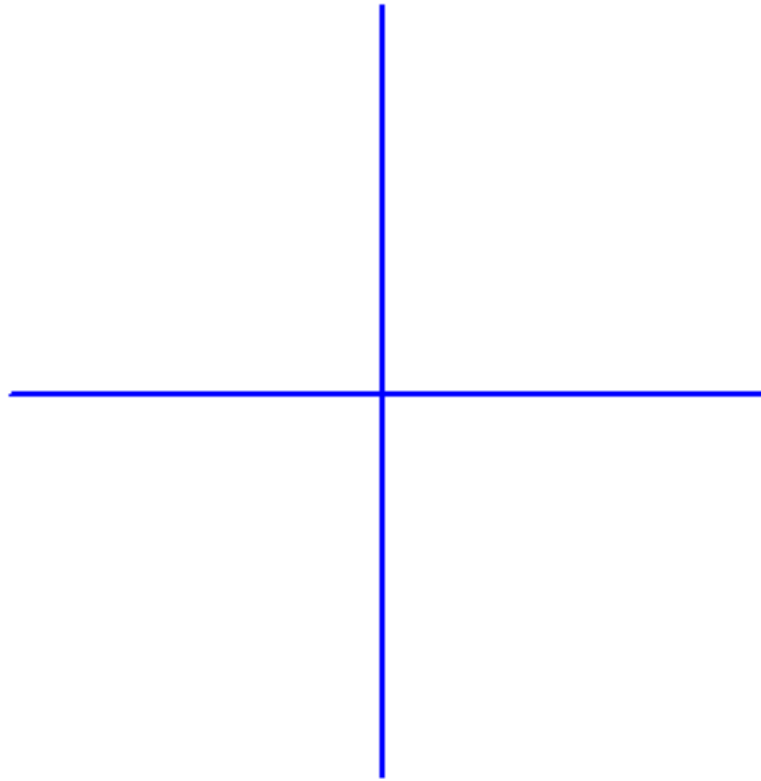
	1			
undefined		1	0	-1
0		-1	0	
			undefined	

[section a the unit circle.asf](#)

See ex 4 and 5 in book...caution: this is NOT in the unit circle!



Find the values of the six trig functions for angle  $\theta$  in standard position if a point with coordinates  $(-2,6)$  lies on the terminal side of the angle.



Suppose  $\theta$  is an angle in standard position whose terminal side lies in Quadrant III. If  $\sin\theta = -4/5$ , find the values of the remaining five trig functions.

How is this example different from the previous example?

