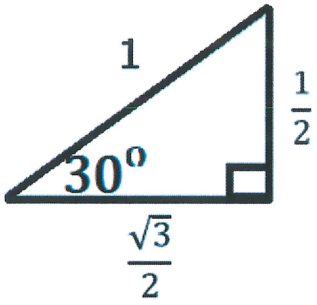
Name: Key

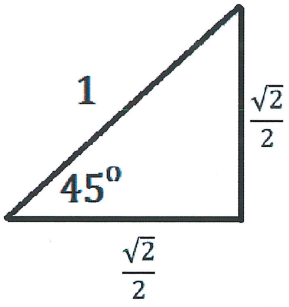
# Trig Functions of General Angles HW (Degrees)

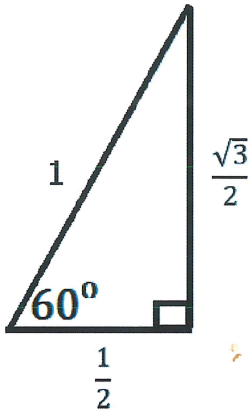
## To find the EXACT trigonometric values Notes

1.) Sketch the angle
2.) Label the reference angle
3.) Draw a triangle to the x-axis and label sides
4.) Find the trig values

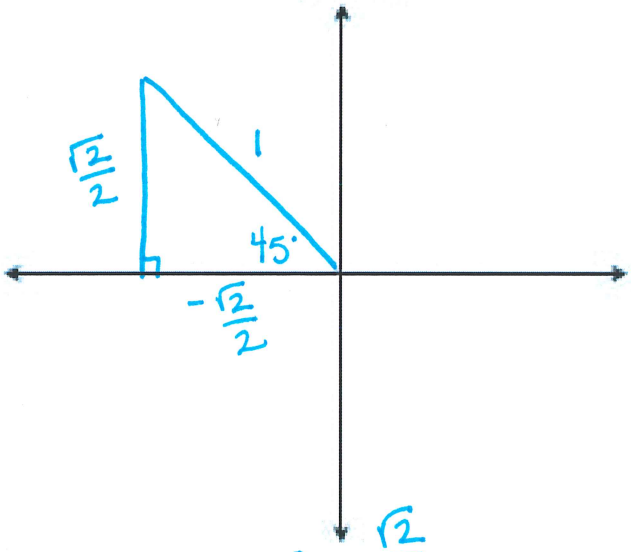
Recall that the radius is one because we are working with the unit circle.



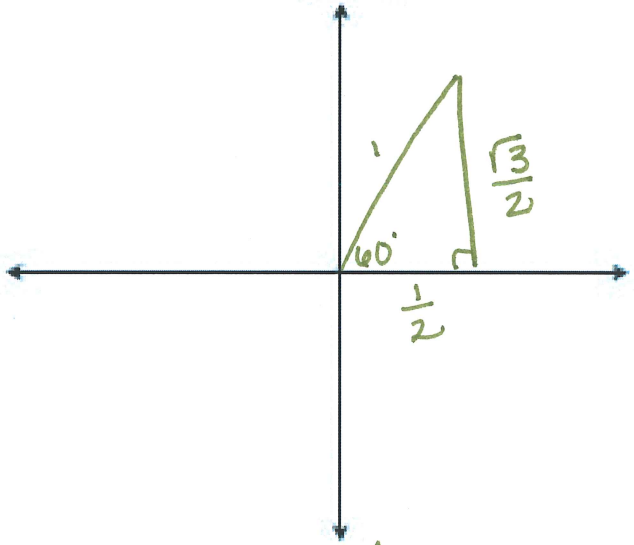

1. Find the exact value of sin 135°.




Sin 135° = $\frac{\frac{\sqrt{2}}{2}}{\frac{1}{1}}$

Sin 135° = $\frac{\sqrt{2}}{2}$

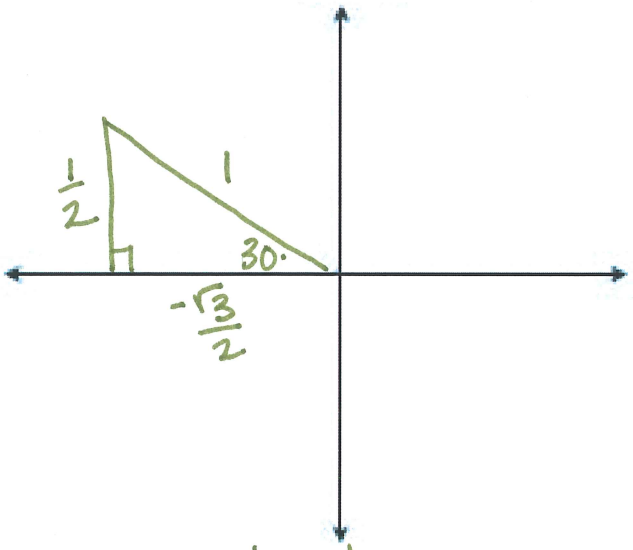
2. Find the exact value of cos 60°.




Cos 60° = $\frac{\frac{1}{2}}{\frac{1}{1}}$

Cos 60° = $\frac{1}{2}$

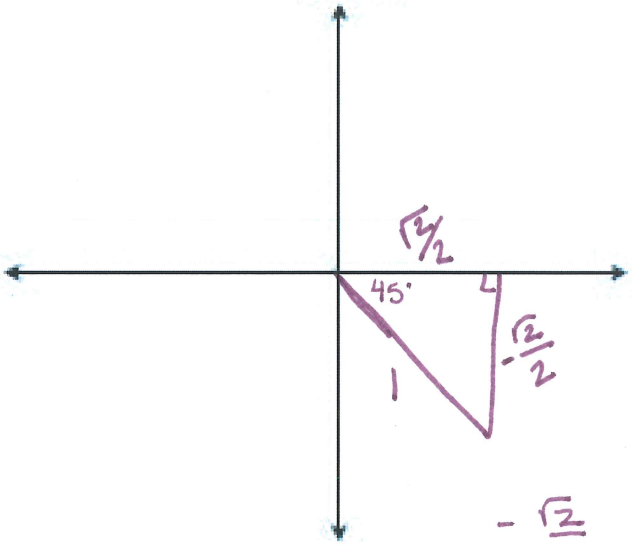
3. Find the exact value of sin 150°.




$\sin 150° = \frac{\frac{1}{2}}{1}$

$\sin 150° = \frac{1}{2}$

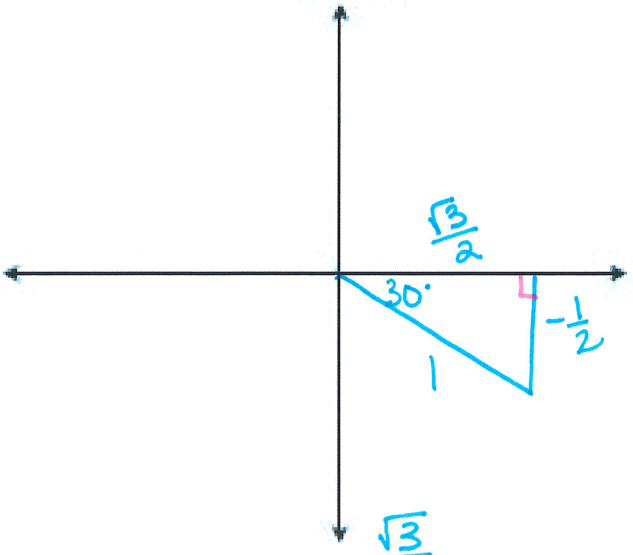
4. Find the exact value of tan 315°.




$\tan 315° = \frac{-\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}}$

$\tan 315° = -1$

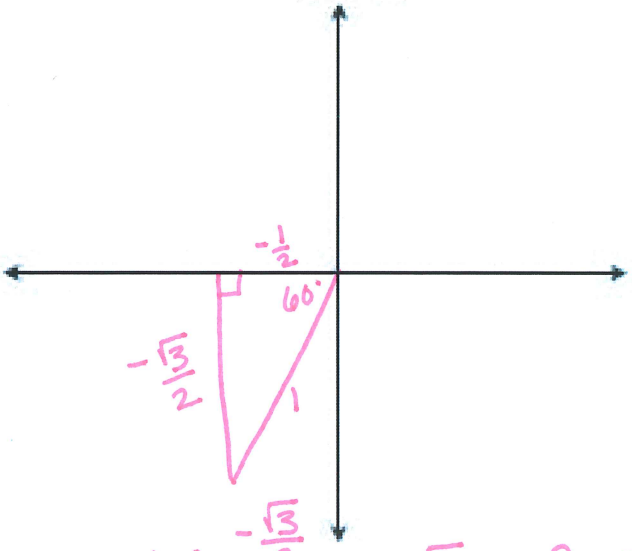
5. Find the exact value of cos 330°.




$\cos 330° = \frac{\frac{\sqrt{3}}{2}}{1}$

$\cos 330° = \frac{\sqrt{3}}{2}$

6. Find the exact value of tan 240°.



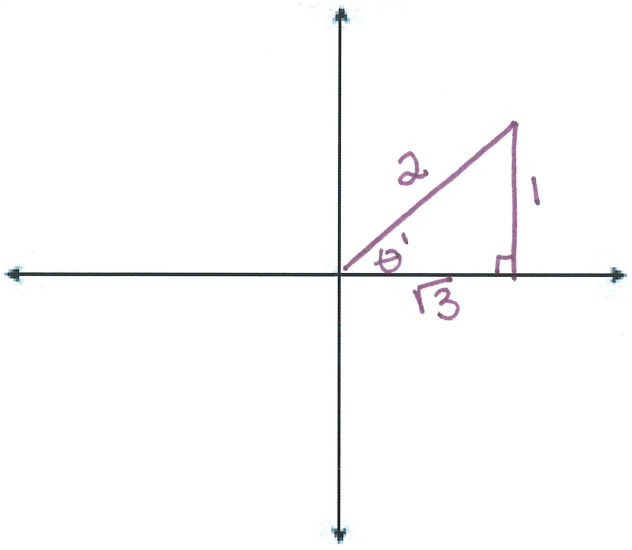

$\tan 240° = \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\frac{\sqrt{3}}{2} \cdot -\frac{2}{1} = \frac{2\sqrt{3}}{2}$

$\tan 240° = \sqrt{3}$

7. If $\cos\theta = \frac{\sqrt{3}}{2}$ and in quadrant I, complete the following:

a.) Construct the triangle on the coordinate plane.
b.) Find the value of the reference angle in degrees.
c.) Find the length of the missing side.
d.) Find the value of sin θ.

a.)




b.) Reference angle θ`= 30°

c.) missing side length = 1

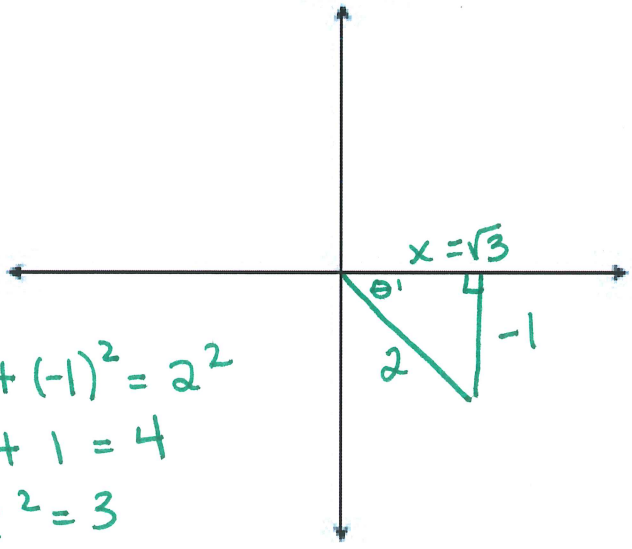
$(\sqrt{3})^2 + y^2 = 2^2$
$y^2 = 1$

d.) sin θ= $\frac{1}{2}$

8. If $\sin\theta = -\frac{1}{2}$ and in quadrant IV, complete the following:

a.) Construct the triangle on the coordinate plane.
b.) Find the value of the reference angle in degrees.
c.) Find the length of the missing side.
d.) Find the value of cos θ.

a.)




$x^2 + (-1)^2 = 2^2$
$x^2 + 1 = 4$
$x^2 = 3$
$x = \sqrt{3}$

b.) Reference angle θ`= 30°

c.) missing side length = $\sqrt{3}$

d.) cos θ= $\frac{\sqrt{3}}{2}$