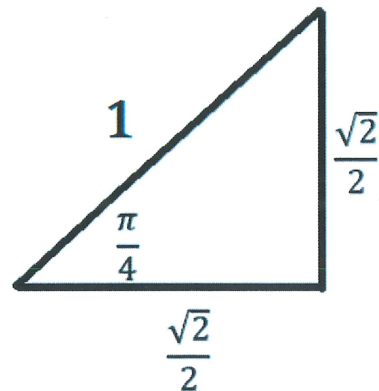
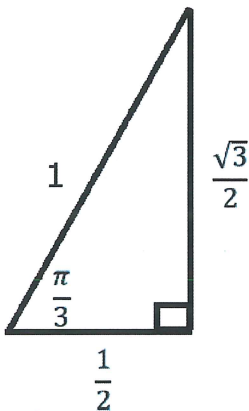
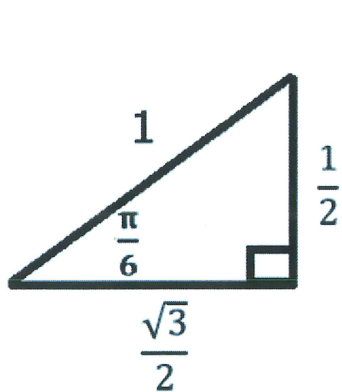


Trig Functions of General Angles Notes (Radians)

To find the EXACT trigonometric values Notes

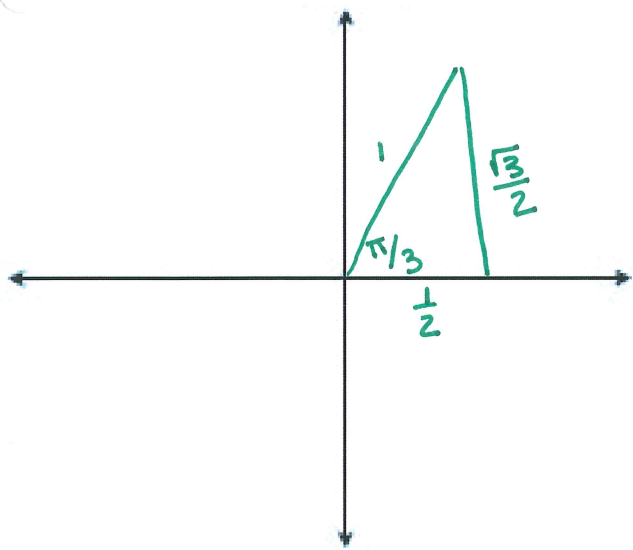
- 1.) Sketch the angle
- 2.) Label the reference angle- IN RADIANS!
- 3.) Draw a triangle to the x-axis and label sides
- 4.) Find the trig values

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



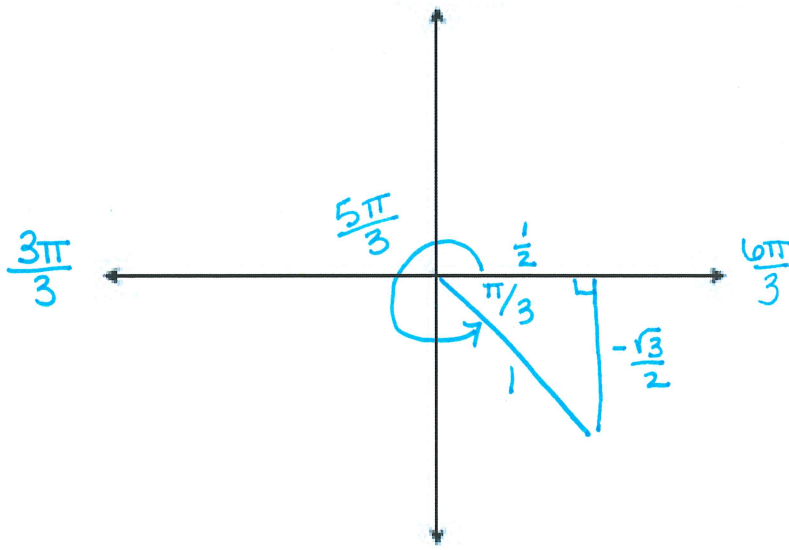
1. Find the exact value of $\sin \frac{\pi}{3}$. Ah!

2. Find the exact value of $\cos \frac{5\pi}{3}$.



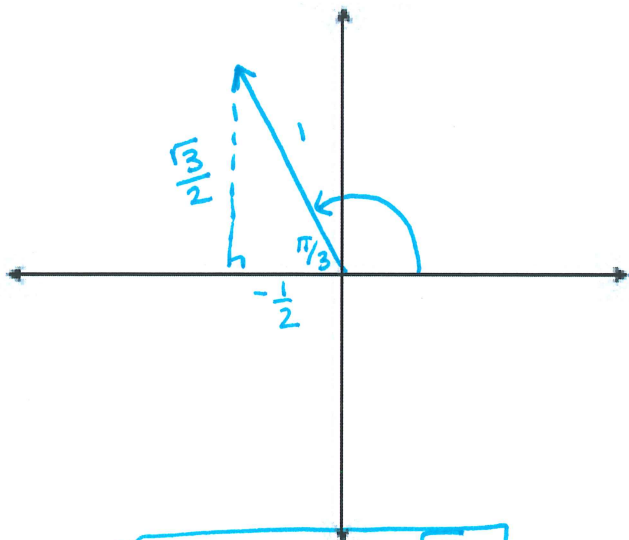
$$\sin \frac{\pi}{3} = \frac{\frac{\sqrt{3}}{2}}{1}$$

$$\boxed{\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}}$$



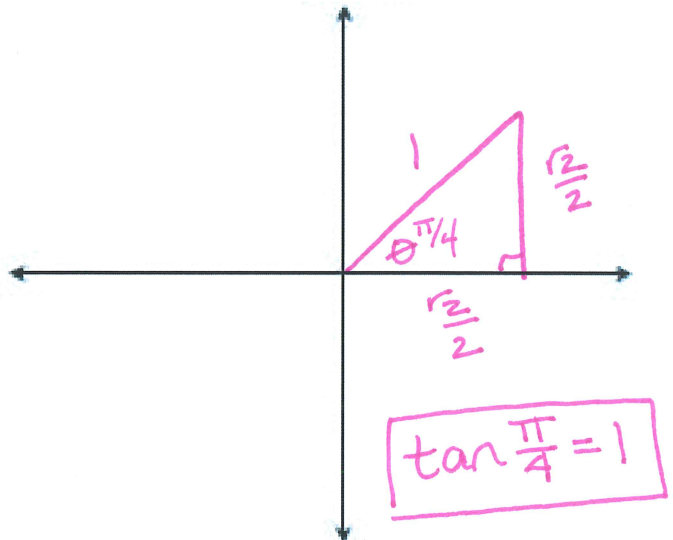
$$\boxed{\cos \frac{5\pi}{3} = \frac{1}{2}}$$

3. Find the exact value of $\sin \frac{2\pi}{3}$



$$\sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2}$$

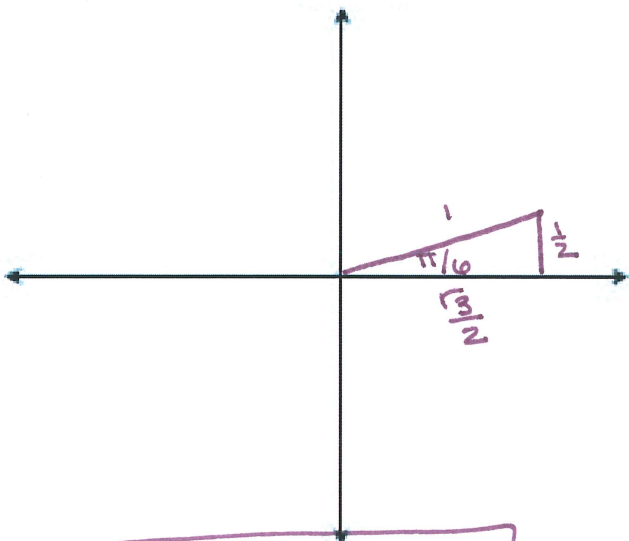
4. Find the exact value of $\tan \frac{\pi}{4}$.



$$\tan \frac{\pi}{4} = 1$$

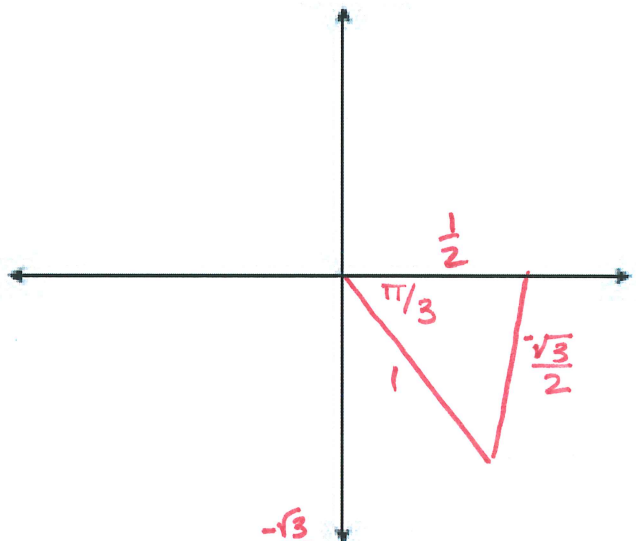
$$\tan \frac{\pi}{4} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$$

5. Find the exact value of $\cos \frac{\pi}{6}$



$$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$$

6. Find the exact value of $\tan \frac{5\pi}{3}$.



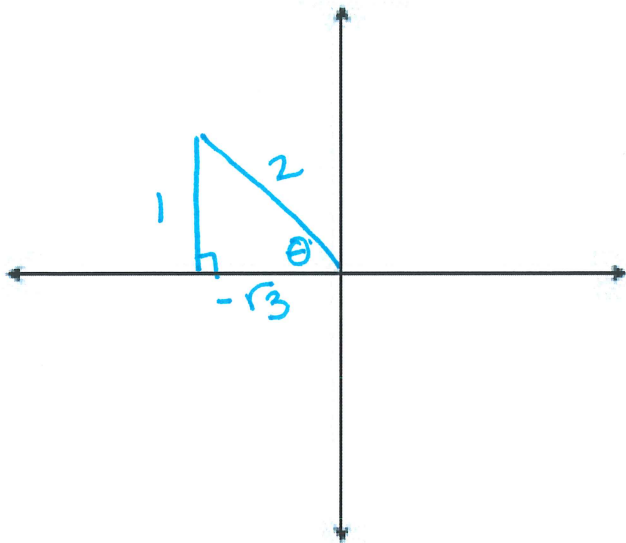
$$\tan \frac{5\pi}{3} = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\frac{\sqrt{3}}{2} \cdot \frac{2}{1}$$

$$\tan \frac{5\pi}{3} = -\sqrt{3}$$

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

- Construct the triangle on the coordinate plane.
- Find the value of the reference angle in radians.
- Find the length of the missing side.
- Find the value of $\cos\theta$.

a.)



b.) Reference angle $\theta' = \frac{\pi}{6}$

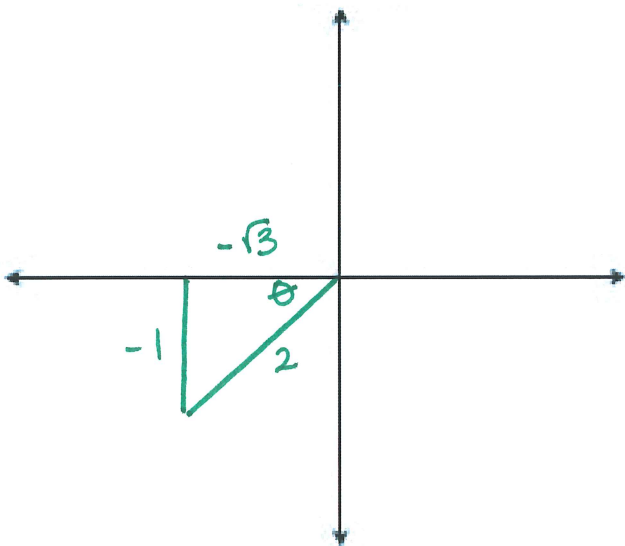
c.) missing side length = $1^2 + x^2 = 2^2$
 $x = \sqrt{3}$

d.) $\cos\theta = -\frac{\sqrt{3}}{2}$

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

- Construct the triangle on the coordinate plane.
- Find the value of the reference angle in radians.
- Find the length of the missing side.
- Find the value of $\sin\theta$.

a.)



b.) Reference angle $\theta' = \frac{\pi}{6}$

c.) missing side length = $(-\sqrt{3})^2 + y^2 = 2^2$
 $y = -1$

d.) $\sin\theta = -\frac{1}{2}$