

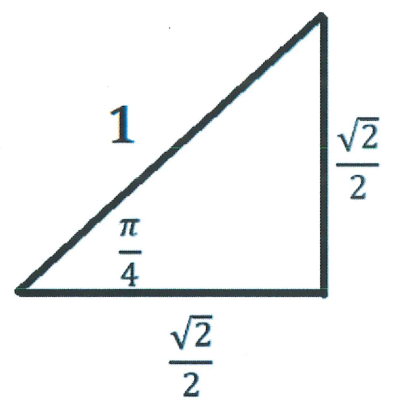
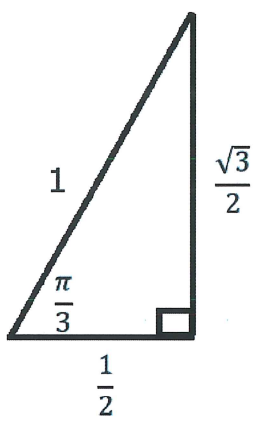
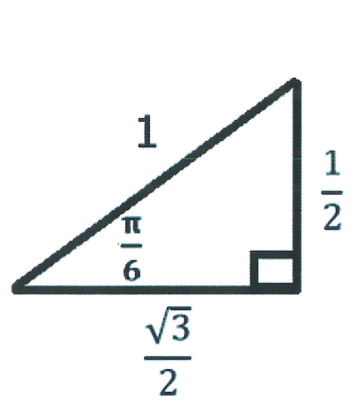
Name: Key

Trig Functions of General Angles HW (Radians)

To find the EXACT trigonometric values Notes

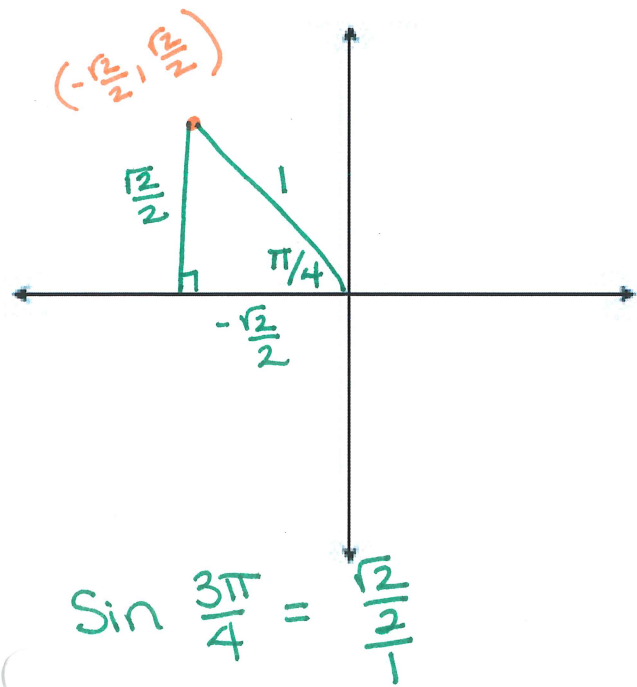
- 1.) Sketch the angle
- 2.) Label the reference angle - In Radians!!!! 😊
- 3.) Draw a triangle to the x-axis and label sides
- 4.) Find the trig values

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



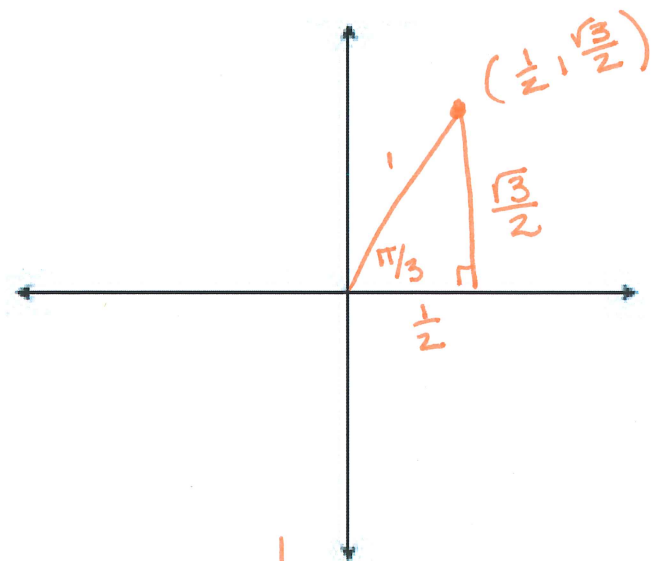
1. Find the exact value of $\sin \frac{3\pi}{4}$

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



$$\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$$

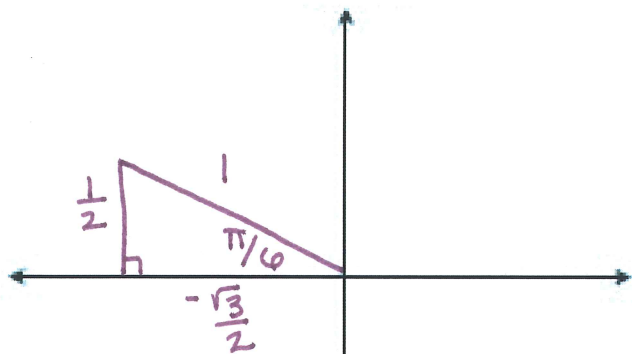
$$\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$$



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

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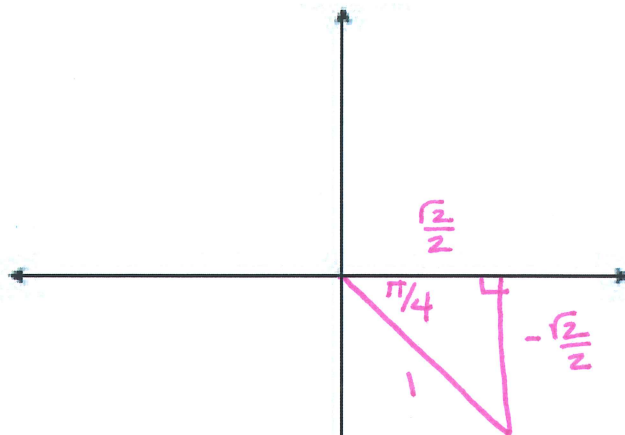
3. Find the exact value of $\sin \frac{5\pi}{6}$.



$$\sin \frac{5\pi}{6} = \frac{1}{2}$$

$$\boxed{\sin \frac{5\pi}{6} = \frac{1}{2}}$$

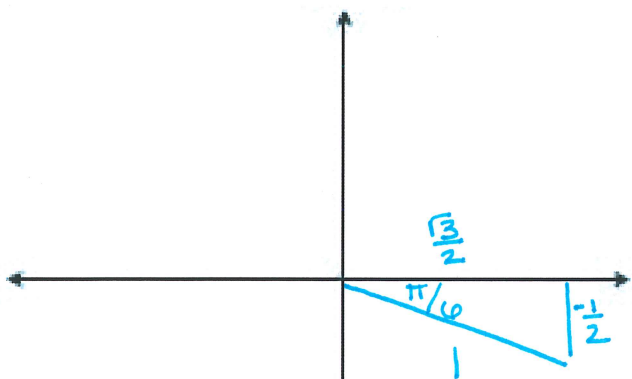
4. Find the exact value of $\tan \frac{7\pi}{4}$.



$$\tan \frac{7\pi}{4} = \frac{-\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = -1$$

$$\boxed{\tan \frac{7\pi}{4} = -1}$$

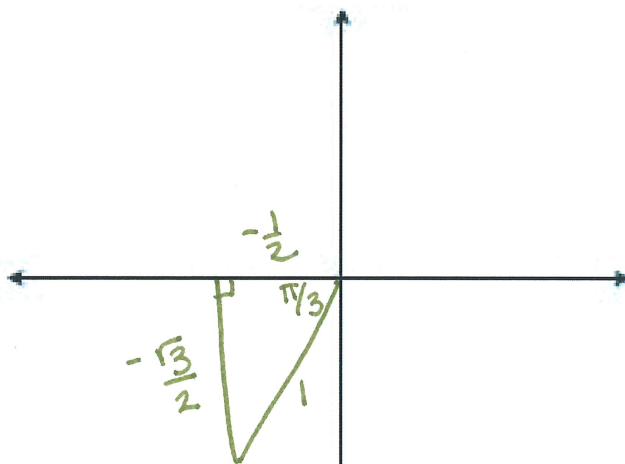
5. Find the exact value of $\cos \frac{11\pi}{6}$.



$$\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2}$$

$$\boxed{\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2}}$$

6. Find the exact value of $\tan \frac{4\pi}{3}$.



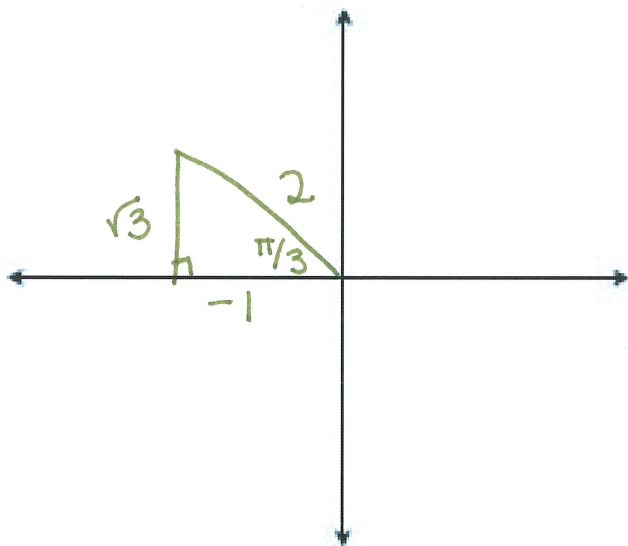
$$\tan \frac{4\pi}{3} = \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \frac{-\sqrt{3}}{2} \cdot \frac{-2}{1} = \sqrt{3}$$

$$\boxed{\tan \frac{4\pi}{3} = \sqrt{3}}$$

7. If $\cos\theta = -\frac{1}{2}$ 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 $\sin\theta$.

a.)



b.) Reference angle $\theta' = \frac{\pi}{3}$

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

$$(-1)^2 + y^2 = 2^2$$

$$1 + y^2 = 4$$

$$y^2 = 3$$

$$y = \sqrt{3}$$

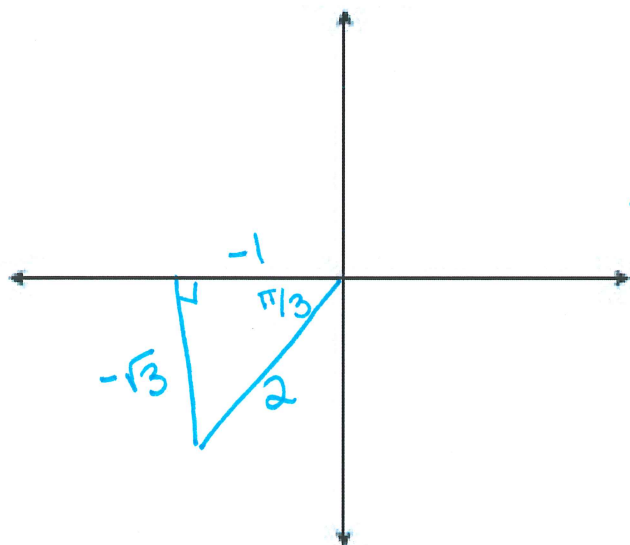
d.) $\sin\theta =$

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

8. If $\sin\theta = -\frac{\sqrt{3}}{2}$ 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 $\cos\theta$.

a.)



b.) Reference angle $\theta' = \frac{\pi}{3}$

c.) missing side length = -1

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

$$x^2 + 3 = 4$$

$$x^2 = 1$$

$$x = -1$$

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