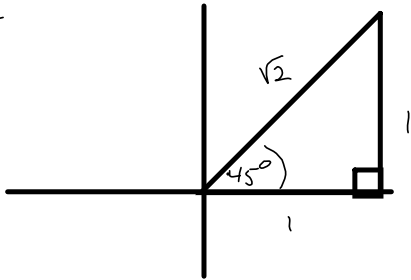


Section 1.4 - Trigonometric Functions of ANY Angle

Let's do the BASICS for Quadrant 1:

45-45 Right Triangle

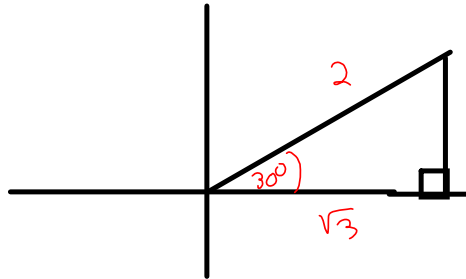


$$\sin 45^\circ = \frac{1}{\sqrt{2}}$$

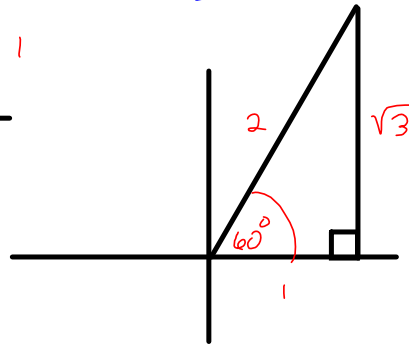
$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}}$$

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

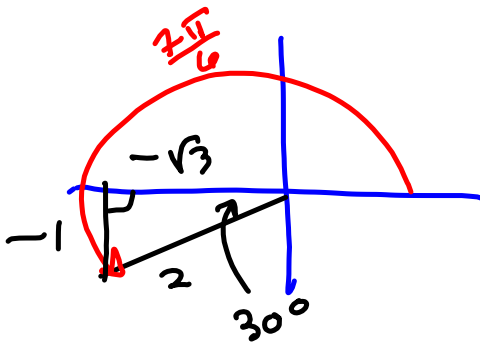
30-60 Right Triangle
TWO ORIENTATIONS



$$\frac{\pi}{6}, \frac{\pi}{3}$$



$$\sin \frac{7\pi}{6} = \sin(210^\circ)$$

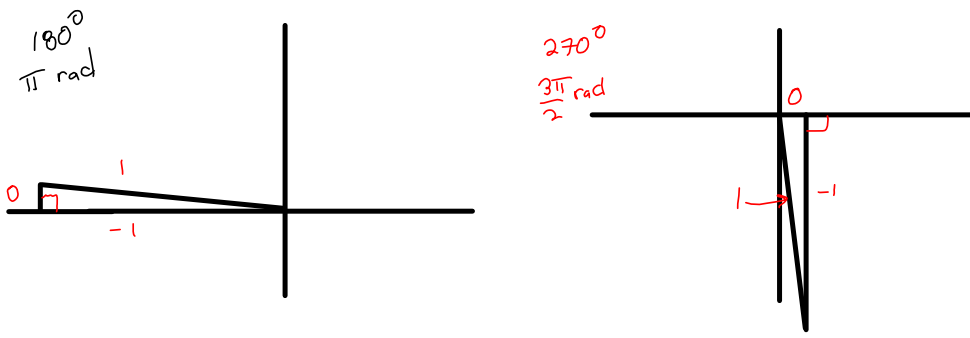
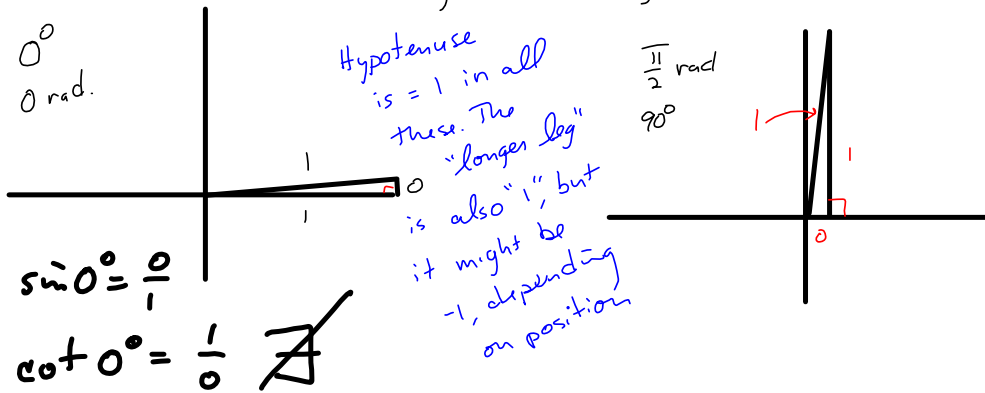


$$\sin \frac{7\pi}{6} = -\frac{1}{2}$$

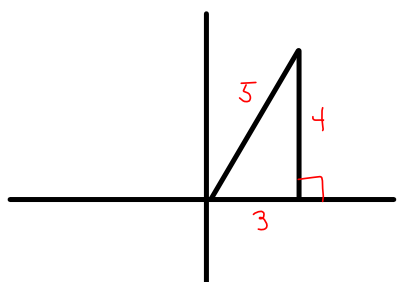
$$\cos \frac{7\pi}{6} = -\frac{\sqrt{3}}{2}$$

$$\tan \frac{7\pi}{6} = \frac{1}{\sqrt{3}}$$

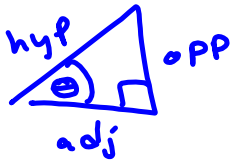
Quadrant (al) Angles
(Degenerate Triangles)



SPECIAL : 3-4-5 Right Triangle



soh cah toa



$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$

$$\csc \theta = \frac{\text{hyp}}{\text{opp}}$$

$$\sec \theta = \frac{\text{hyp}}{\text{adj}}$$

$$\cot \theta = \frac{\text{adj}}{\text{opp}}$$

The point is on the terminal side of an angle in standard position. Determine the exact values of the six trigonometric functions of the angle.

$$\left(3\frac{1}{2}, -7\frac{1}{4}\right) = \left(\frac{7}{2}, -\frac{29}{4}\right)$$

$$x^2 + y^2 = r^2$$

$$\left(\frac{7}{2}\right)^2 + \left(\frac{29}{4}\right)^2 =$$

$$\frac{49}{4} + \frac{841}{16} = \frac{1037}{16} = r^2$$

$$= \frac{(17)(61)}{16}$$

∵ 61 is prime,
I think.

This
∴ S.I.4 #18

