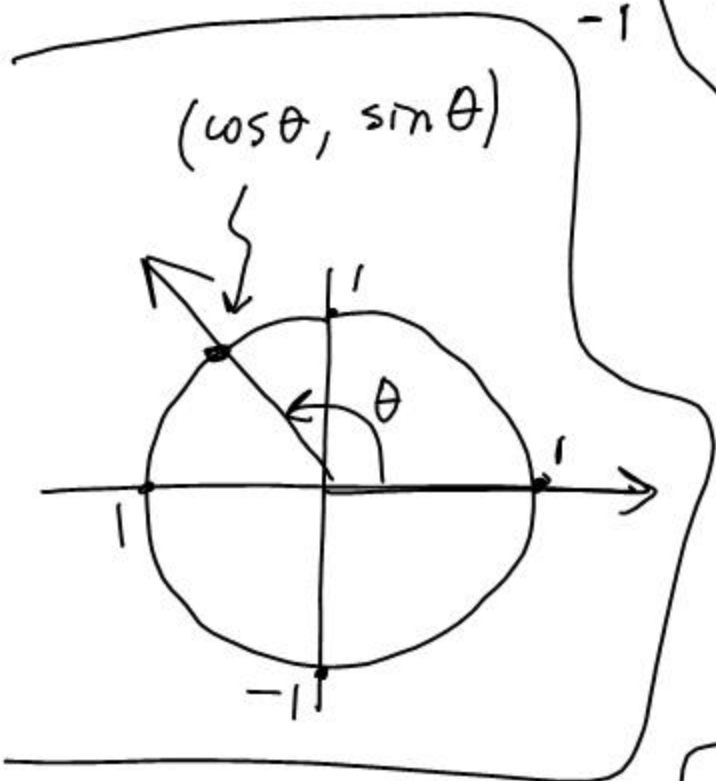
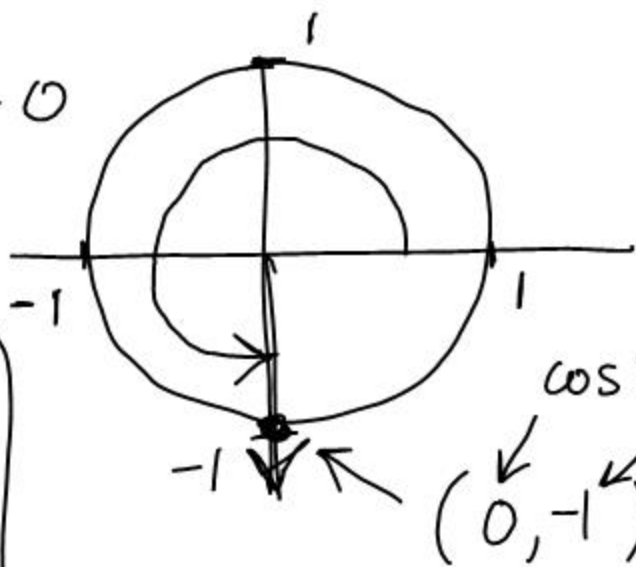


Trig values of Special Angles

$$\cos 270^\circ = 0$$



$$\begin{aligned} \tan 270^\circ & \text{ dne} \\ &= \frac{\sin 270^\circ}{\cos 270^\circ} = \frac{-1}{0} \end{aligned}$$

dne = does not exist

$$\sec 270^\circ = \frac{1}{\cos 270^\circ}$$

dne

$$\begin{aligned} \cot 270^\circ &= \frac{\cos 270^\circ}{\sin 270^\circ} \\ &= \frac{0}{-1} = 0 \end{aligned}$$

$$\csc 270^\circ = \frac{1}{\sin 270^\circ} = \frac{1}{-1} = -1$$

Ex. $\sin \pi = 0$

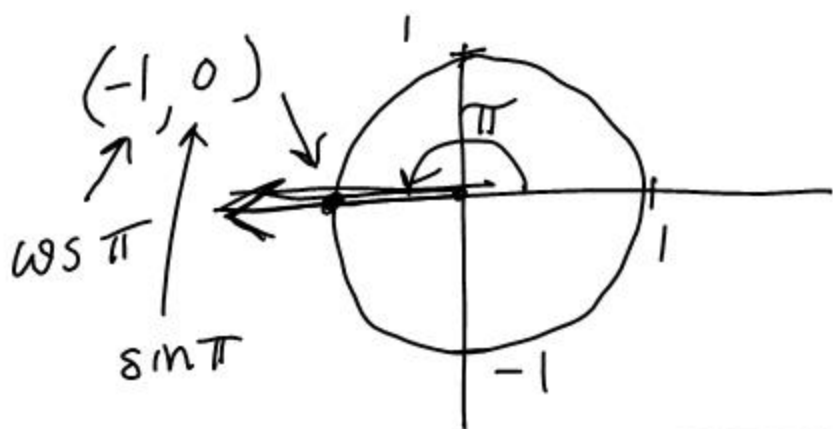
$\cot \pi$ dne

$\cos \pi = -1$

$\sec \pi = -1$

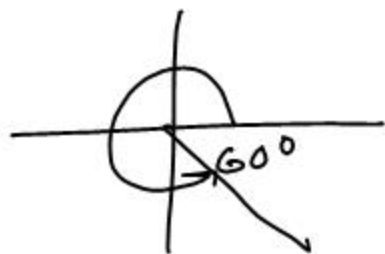
$\tan \pi = 0$

$\csc \pi$ dne



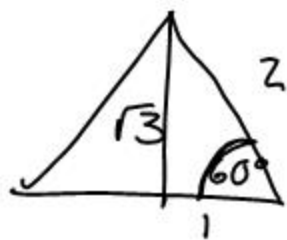
The ASTC method

Ex. $\sec 300^\circ$



step 1 find the reference angle : 60°

step 2 $\sec 60^\circ = 2$



step 3 adjust the sign

$\sec 300^\circ = +2$

Sine +
Cosecant
are +

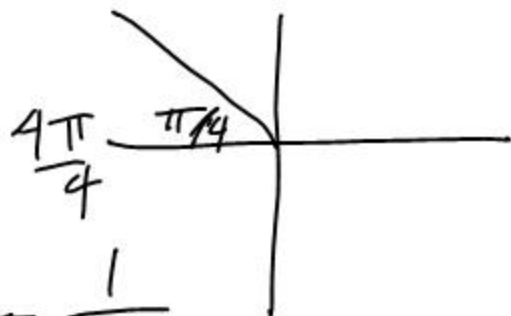
All trig ratios
are positive

Tangent
& cotangent
are +

Cosine &
secant
are positive

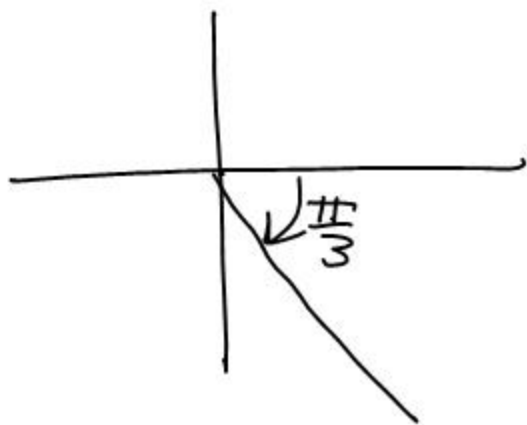


Ex. $\cos \frac{3\pi}{4}$



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

Ex. $\tan \left(-\frac{\pi}{3}\right)$



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

↑
quad IV

↑
ref angle

Practice Quiz

① Find all 6 trig values for

(a) 120°

(c) $\frac{4\pi}{3}$

(b) 330°

(d) $-\frac{5\pi}{4}$

② Use ASTC to find

(a) $\sin 135^\circ$

(c) $\tan \frac{7\pi}{4}$

(b) $\cos 120^\circ$

(d) $\sec \frac{11\pi}{6}$

③ Give all 6 trig values for

(a) -90°

(b) 0°

④ Right Δ trig worksheet #1, 11