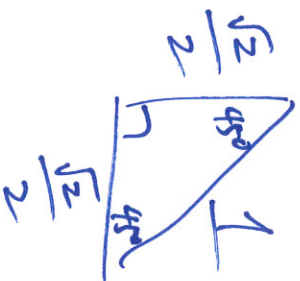
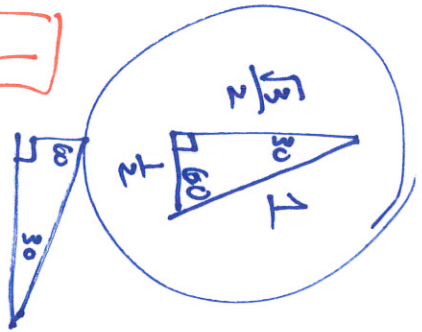
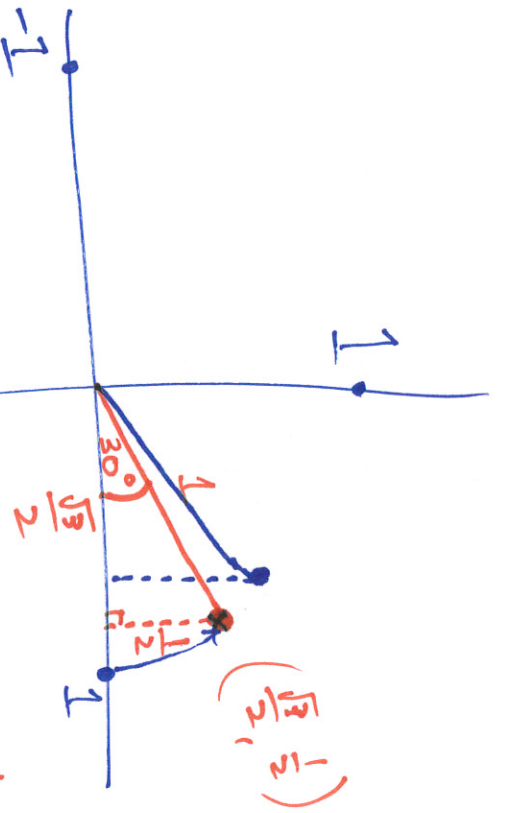


30-60-90

45-45-90



$$\sin 30^\circ = \frac{\text{opp}}{\text{hyp}} = \frac{1/2}{1} = \frac{1}{2}$$

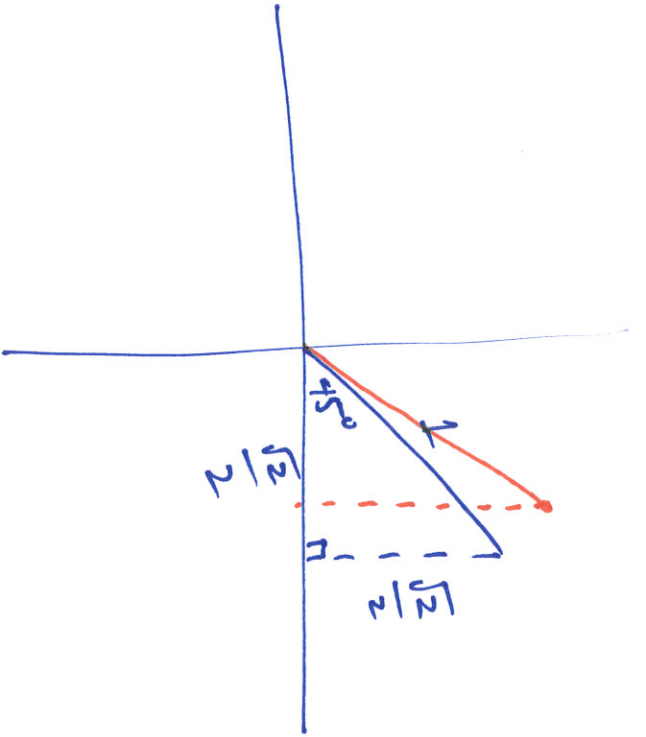
$$\cos 30^\circ = \frac{\text{adj}}{\text{hyp}} = \frac{\sqrt{3}/2}{1} = \frac{\sqrt{3}}{2}$$

~~$x = k\sqrt{3} : 2$~~

$(x, y)$

$$\text{for } 30^\circ = \frac{\text{opp}}{\text{adj}} = \frac{1/2}{\sqrt{3}/2} = \frac{1}{\sqrt{3}}$$

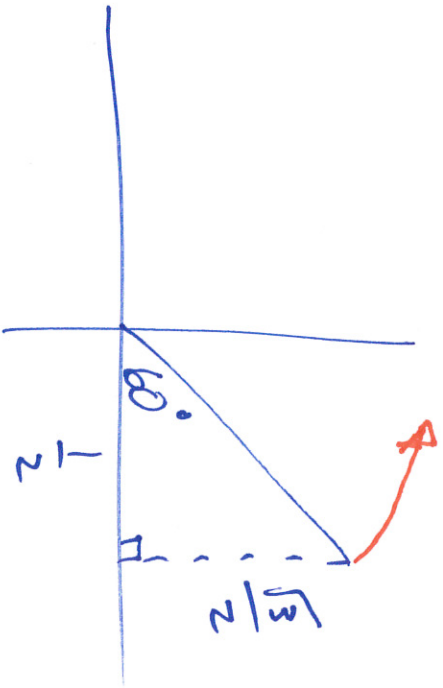
$\frac{\sqrt{3}}{3}$



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

$$\cos 45^\circ = \frac{\sqrt{2}}{2}$$

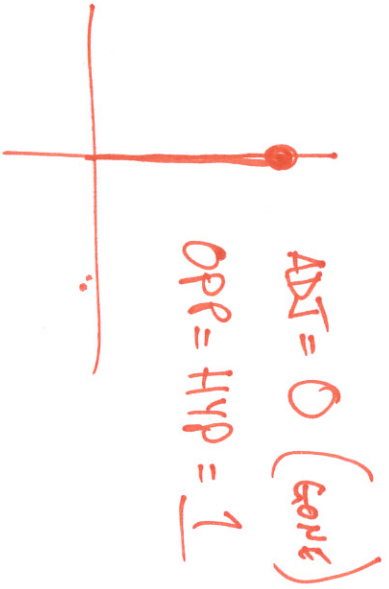
$$\tan 45^\circ = 1$$



$$\sin 60^\circ = \frac{\sqrt{3}}{2}$$

$$\cos 60^\circ = \frac{1}{2}$$

$$\tan 60^\circ = \sqrt{3}$$



$$\text{ADJ} = 0 \text{ (GONK)}$$

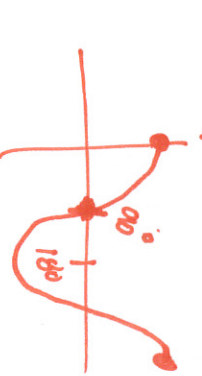
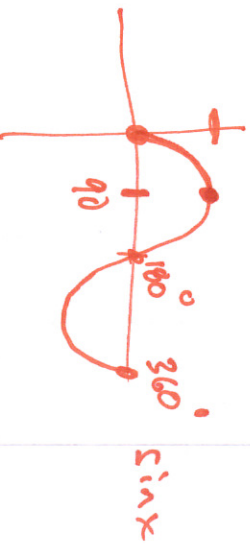
$$\text{OPP} = \text{HYP} = 1$$

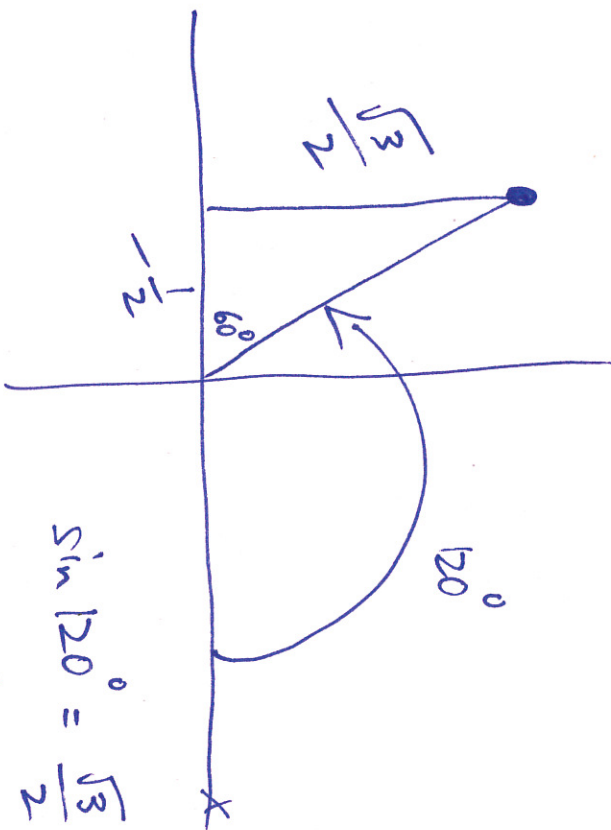
$$\sin 90^\circ = 1$$

$$\cos 90^\circ = 0$$

$$\tan 90^\circ = \text{UNDEF}$$

$$\left( \frac{\sqrt{3}}{2} \quad \frac{1}{2} \right) \rightarrow \left( \frac{\sqrt{3}}{2} \cdot 2 \quad \frac{1}{2} \cdot 2 \right) \rightarrow (\sqrt{3} \quad 1)$$

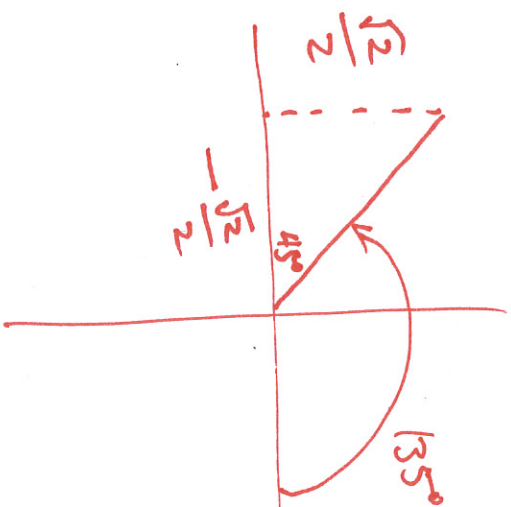
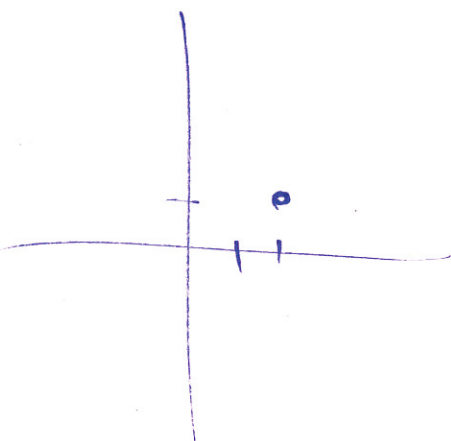




$$\sin 120^\circ = \frac{\sqrt{3}}{2}$$

$$\cos 120^\circ = -\frac{1}{2}$$

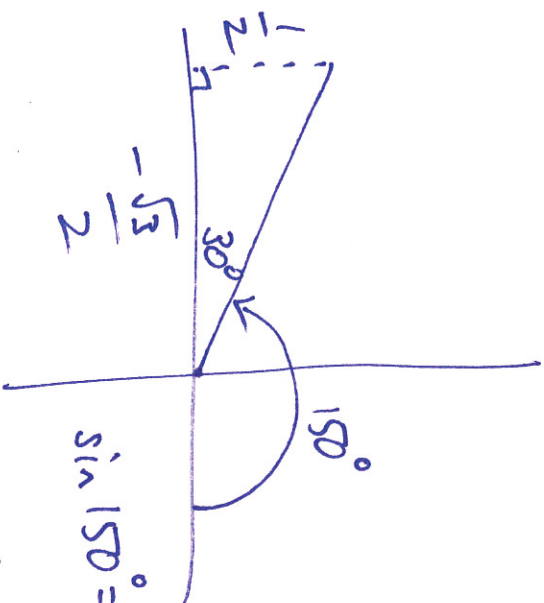
$$\tan 120^\circ = -\sqrt{3}$$



$$\sin 135^\circ = \frac{\sqrt{2}}{2}$$

$$\cos 135^\circ = -\frac{\sqrt{2}}{2}$$

$$\tan 135^\circ = -1$$

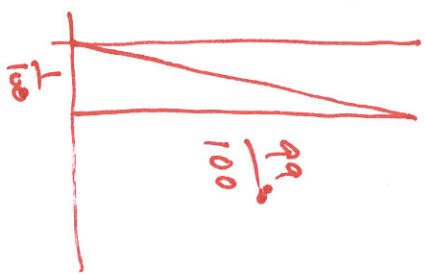


$$\sin 150^\circ = \frac{1}{2}$$

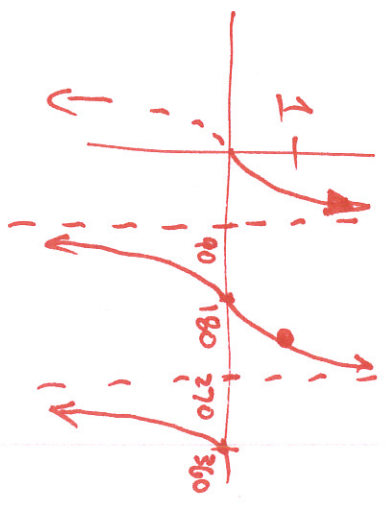
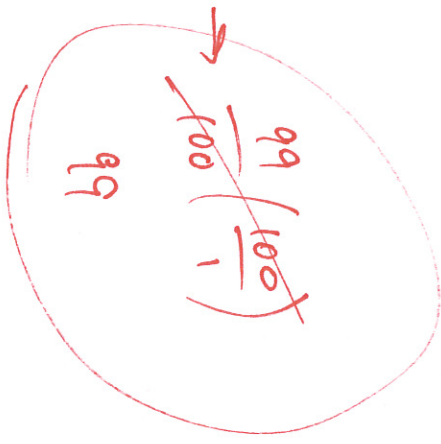
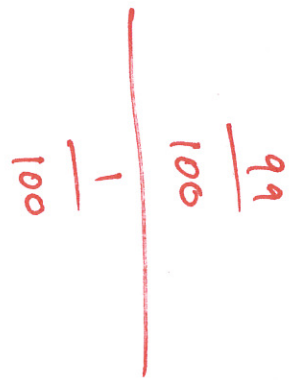
$$\cos 150^\circ = -\frac{\sqrt{3}}{2}$$

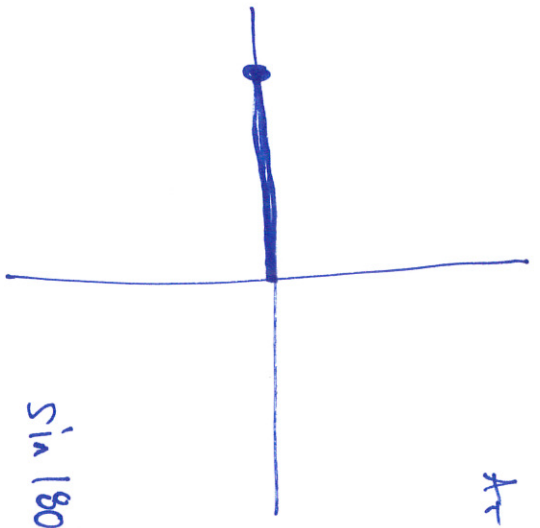
$$\tan 150^\circ = -\frac{1}{\sqrt{3}}$$

89.9°



fn →





At  $180^\circ$ :

opp side has vanished  
adj side is one with hypotenuse

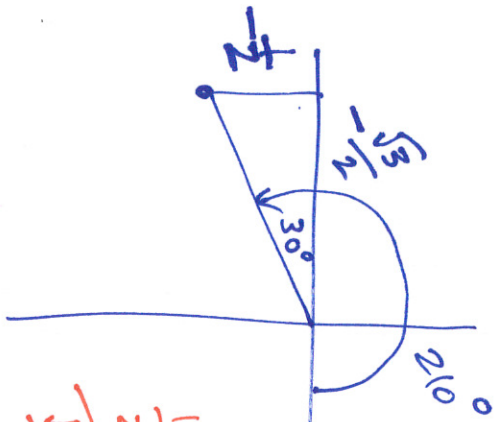
\* hypotenuse is a distance, adjacent side is 'location'  $\rightarrow$

adj = -1  
hyp = 1 (always)

$\sin 180^\circ = 0$

$\cos 180^\circ = -1$

$\tan 180^\circ = 0$



$\sin 210^\circ = \sin \frac{7\pi}{6} = -\frac{1}{2}$

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

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

$-\frac{1}{2} \frac{\sqrt{3}}{2} \rightarrow \frac{1}{2} \left( \frac{2}{\sqrt{3}} \right) = \frac{\sqrt{3}}{3}$

$210^\circ \left( \frac{\pi}{180} \right) = \frac{7\pi}{6}$

ex:  $\frac{5}{12} \pi \left( \frac{180}{\pi} \right) = 75^\circ$

DEGS TO RADS (YOU WANT THE PI)

$\left( \frac{\pi}{180} \right)$

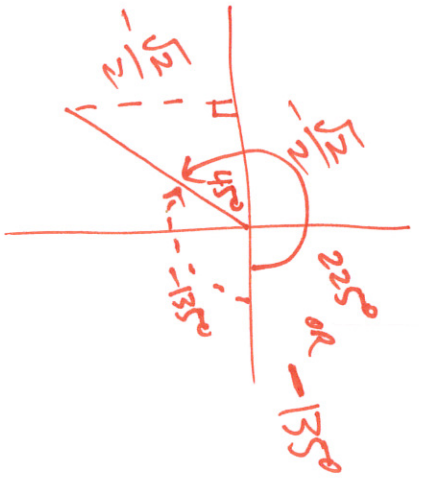
$\downarrow$

= 1

RADS TO DEGS (YOU DON'T WANT THE PI)

$\left( \frac{180}{\pi} \right)$

$\rightarrow$   $\pi$  CANCELS



$$\sin 225^\circ = -\frac{\sqrt{2}}{2}$$

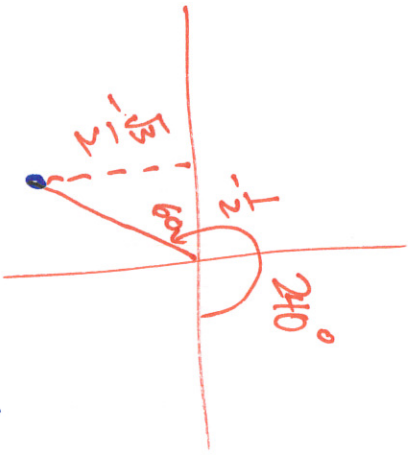
$$\cos 225^\circ = -\frac{\sqrt{2}}{2}$$

$$\sin 135^\circ = \frac{\sqrt{2}}{2}$$

$$\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$$

$$\sin \left(-\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

$$\tan 225^\circ = 1$$

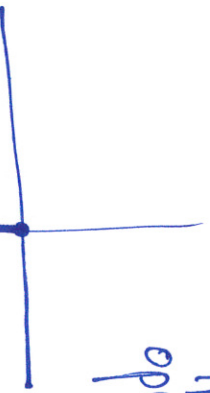


$$\sin 240^\circ = -\frac{\sqrt{3}}{2}$$

$$\cos 240^\circ = -\frac{1}{2}$$

$$\tan 240^\circ = \sqrt{3}$$

$$\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$$



$$\sin 270^\circ = -1$$

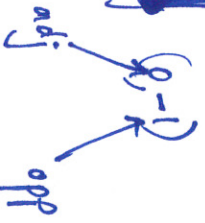
$$\cos 270^\circ = 0$$

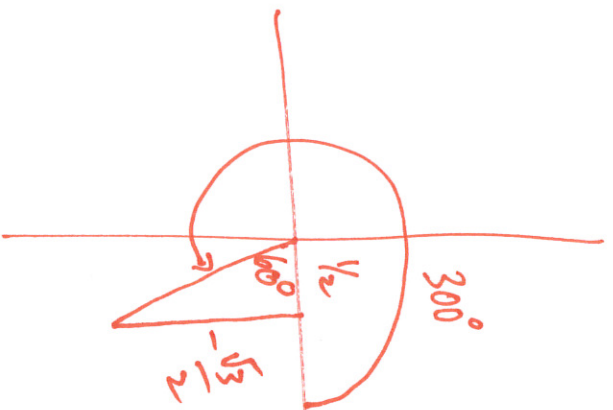
$$\sin 270^\circ = -1$$

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

$$\sin 270^\circ = -1$$

$$\tan 270^\circ = \text{undefined}$$

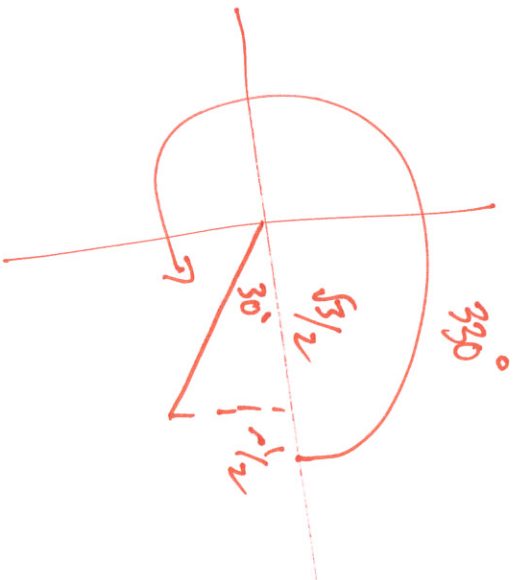




$$\sin 300^\circ = -\frac{\sqrt{3}}{2}$$

$$\cos 300^\circ = \frac{1}{2}$$

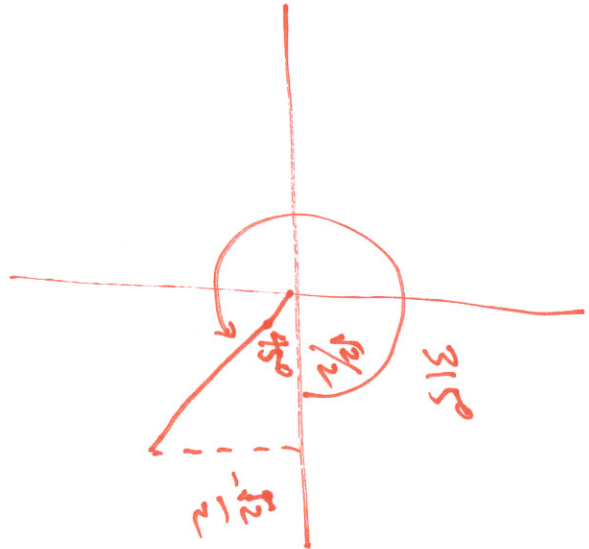
$$\tan 300^\circ = -\sqrt{3}$$



$$\sin 330^\circ = -\frac{1}{2}$$

$$\cos 330^\circ = \frac{\sqrt{3}}{2}$$

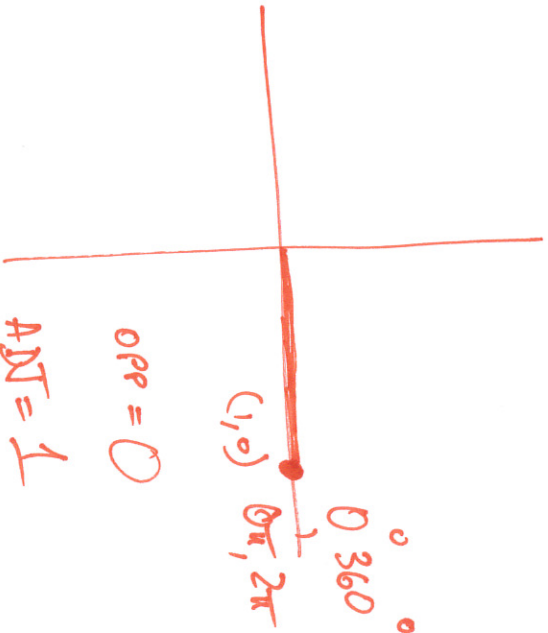
$$\tan 330^\circ = -\frac{\sqrt{3}}{3}$$



$$\sin 315^\circ = -\frac{\sqrt{2}}{2}$$

$$\cos 315^\circ = \frac{\sqrt{2}}{2}$$

$$\tan 315^\circ = -1$$



$$\sin 0^\circ = 0$$

$$\cos 0^\circ = 1$$

$$\tan 0^\circ = 0$$

0 360°  
 (1, 0) sin, 2π