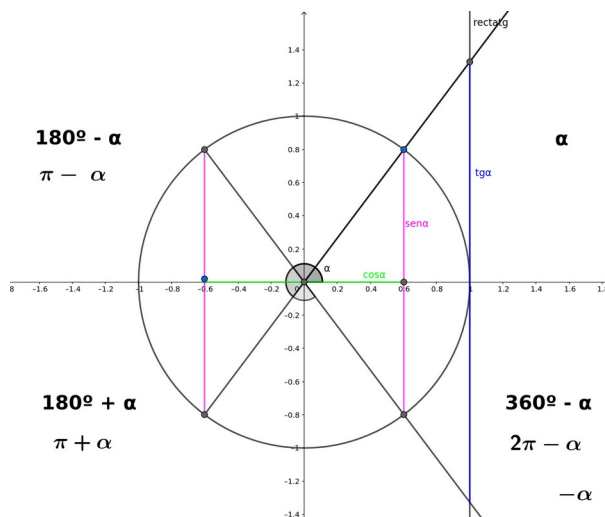


REDUCCIÓN DE ÁNGULOS AL PRIMER CUADRANTE

$$\operatorname{sen}(180^\circ - \alpha) = \operatorname{sen} \alpha$$

$$\cos(180^\circ - \alpha) = -\cos \alpha$$

$$\operatorname{tg}(180^\circ - \alpha) = -\operatorname{tg} \alpha$$



$$\operatorname{sen}(180^\circ + \alpha) = -\operatorname{sen} \alpha$$

$$\cos(180^\circ + \alpha) = -\cos \alpha$$

$$\operatorname{tg}(180^\circ + \alpha) = \operatorname{tg} \alpha$$

$$\operatorname{sen}(360^\circ - \alpha) = -\operatorname{sen} \alpha = \operatorname{sen}(-\alpha)$$

$$\cos(360^\circ - \alpha) = \cos \alpha = \cos(-\alpha)$$

$$\operatorname{tg}(360^\circ - \alpha) = -\operatorname{tg} \alpha = \operatorname{tg}(-\alpha)$$

RAZONES TRIGONOMÉTRICAS DE ÁNGULOS COMPLEMENTARIOS

$$\operatorname{sen}(90^\circ + \alpha) = \cos \alpha$$

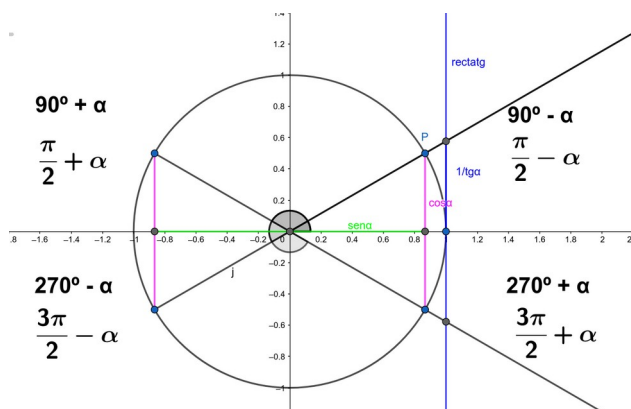
$$\cos(90^\circ + \alpha) = -\operatorname{sen} \alpha$$

$$\operatorname{tg}(90^\circ + \alpha) = -\operatorname{cotg} \alpha$$

$$\operatorname{sen}(90^\circ - \alpha) = \cos \alpha$$

$$\cos(90^\circ - \alpha) = \operatorname{sen} \alpha$$

$$\operatorname{tg}(90^\circ - \alpha) = \operatorname{cotg} \alpha$$



$$\operatorname{sen}(270^\circ - \alpha) = -\cos \alpha$$

$$\cos(270^\circ - \alpha) = -\operatorname{sen} \alpha$$

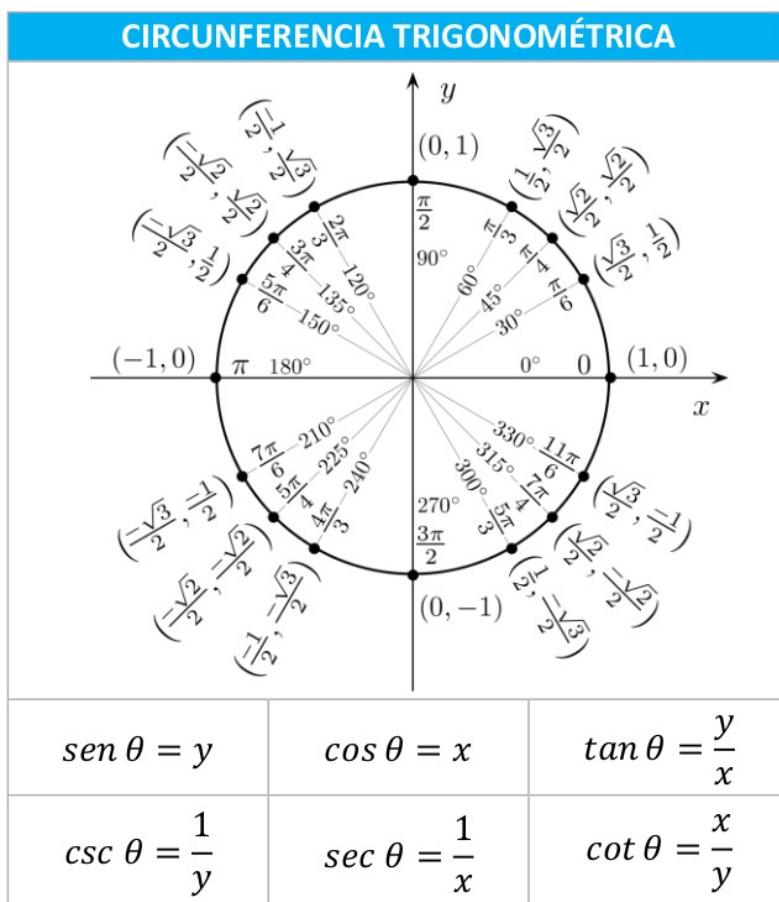
$$\operatorname{tg}(270^\circ - \alpha) = \operatorname{cotg} \alpha$$

$$\operatorname{sen}(270^\circ + \alpha) = -\cos \alpha$$

$$\cos(270^\circ + \alpha) = \operatorname{sen} \alpha$$

$$\operatorname{tg}(270^\circ + \alpha) = -\operatorname{cotg} \alpha$$

RAZONES TRIGONOMÉTRICAS DE ÁNGULOS NOTABLES



RAZONES TRIGONOMÉTRICAS DE ÁNGULOS NOTABLES				
θ	radianes	$\text{sen } \theta$	$\text{cos } \theta$	$\text{tan } \theta$
0°	0	0	1	0
30°	$\frac{\pi}{6}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
45°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
60°	$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
90°	$\frac{\pi}{2}$	1	0	—
180°	π	0	-1	0
270°	$\frac{3\pi}{2}$	-1	0	—
360°	0	0	1	0