

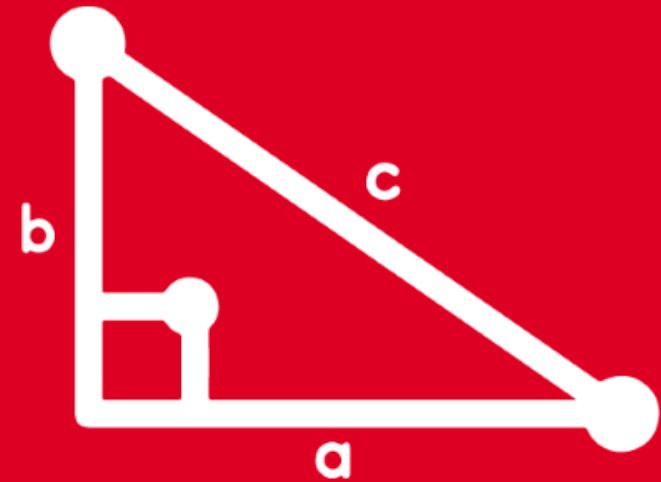


TRIGONOMETRY

Tomo 8

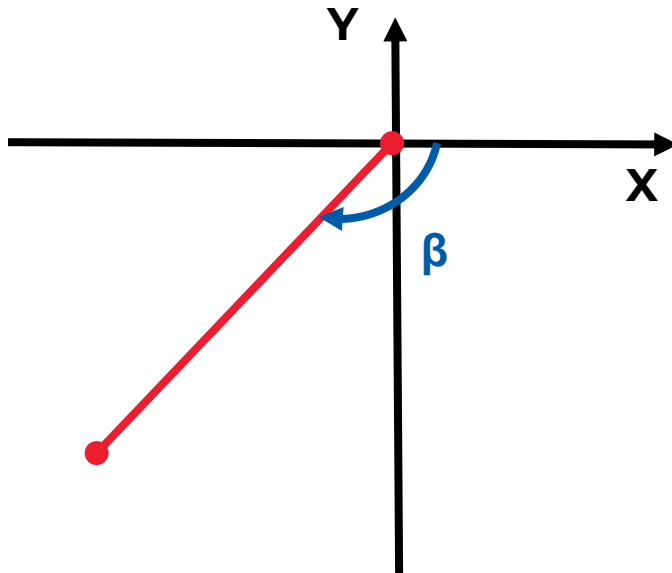
1st
SECONDARY

Review

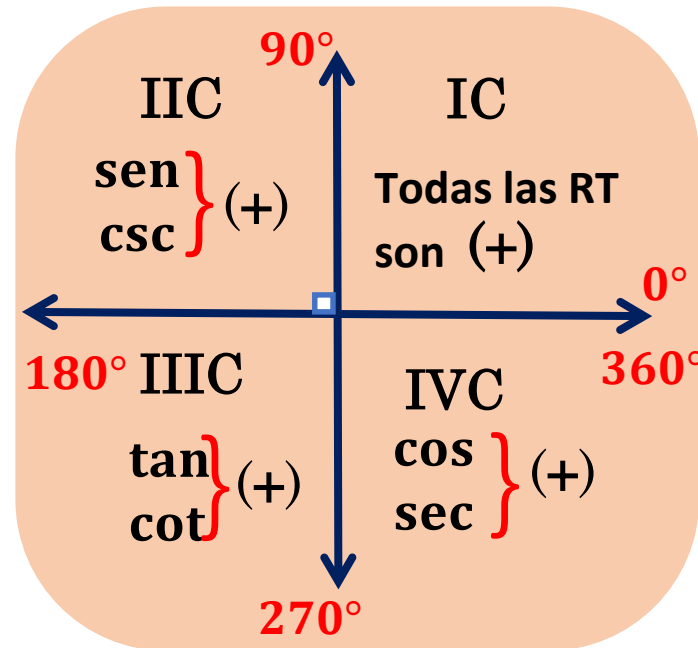




Del gráfico, determine el signo de $\cos\beta$



Recuerda:



Resolución:

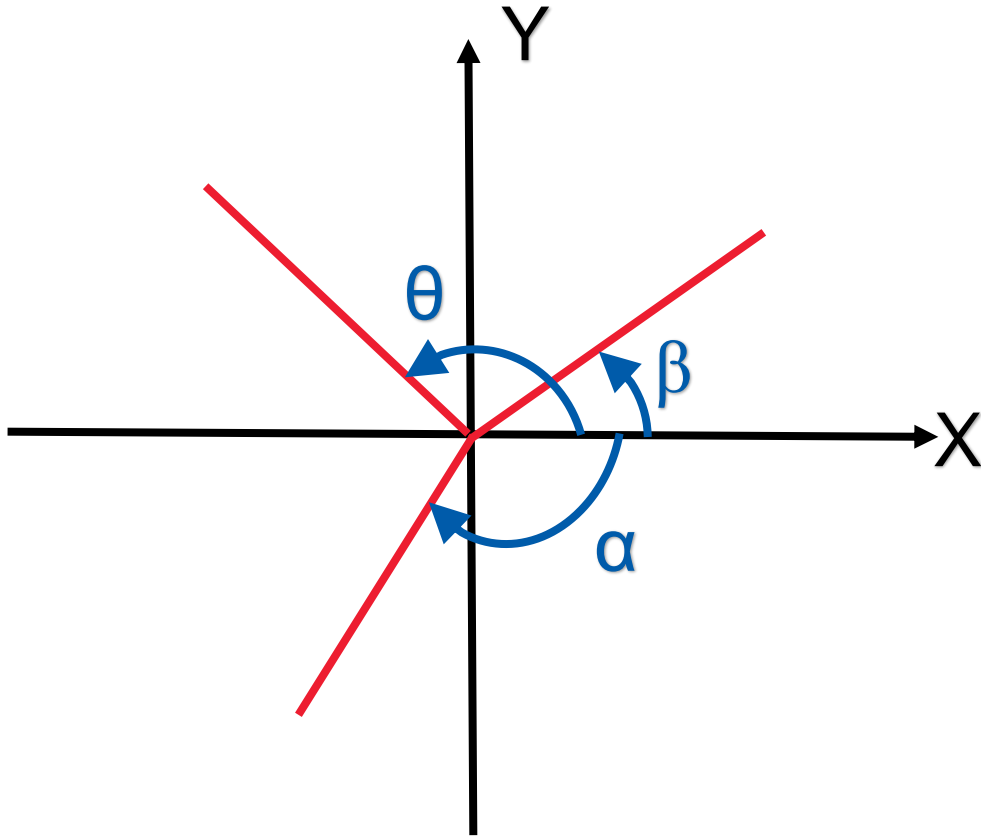
$$\beta \in \text{IIC}$$

$$\therefore \cos\beta = (-)$$





Del gráfico, determine el signo de: $F = \sec\theta.\text{sen}\beta.\text{cota}\alpha$



Resolución:

$$F = \underline{\sec\theta} \cdot \underline{\text{sen}\beta} \cdot \underline{\text{cota}\alpha}$$

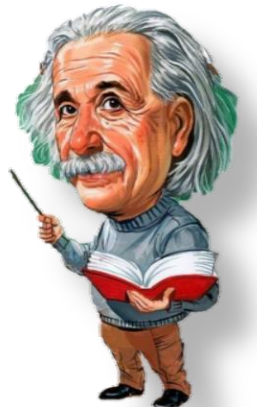
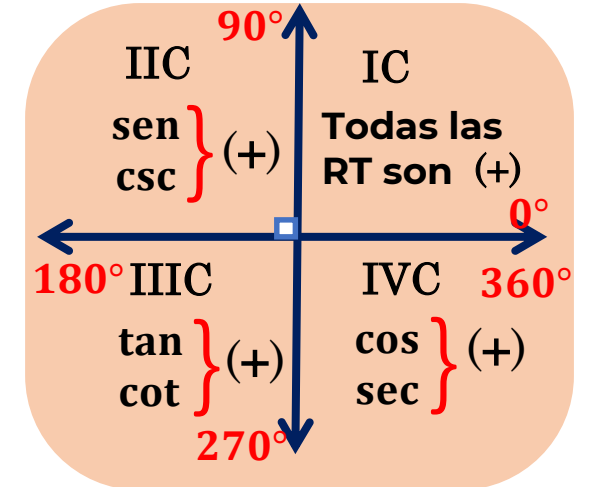
$\in \text{IIC} \quad \in \text{IC} \quad \in \text{IIIC}$

$$F = (-) (+) (+)$$

$$F = (-) (+)$$

$$\therefore F = (-)$$

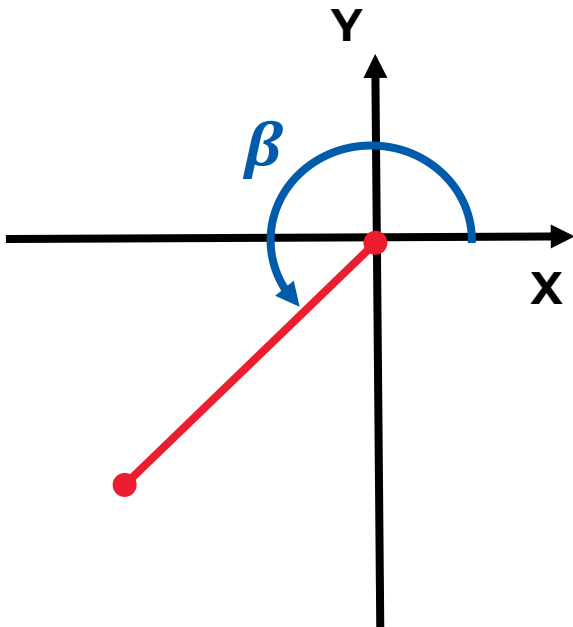
Recuerda:



¡Muy bien!



Determine el signo de $\csc\left(\frac{\beta}{2}\right)$ si se tiene el siguiente gráfico:



Resolución:

$$\beta \in \text{IIIC}$$

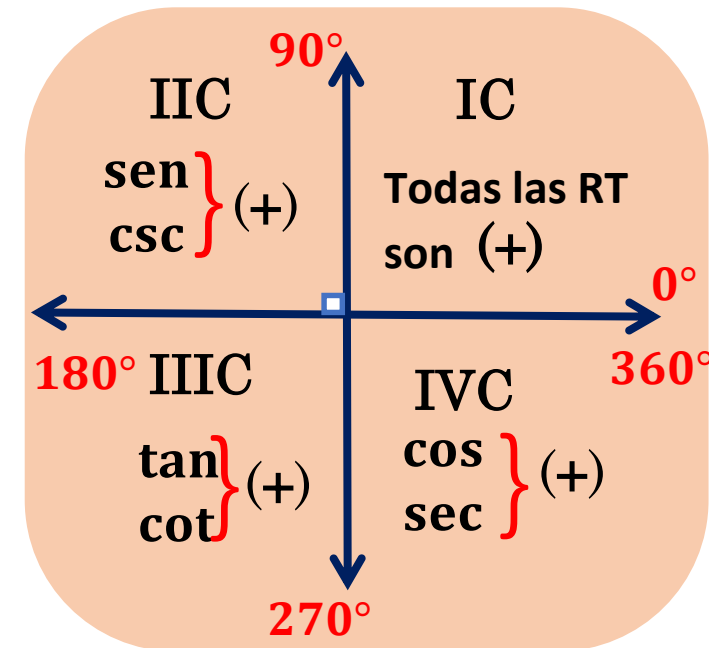
$$180^\circ < \beta < 270^\circ \quad \dots \times \frac{1}{2}$$

$$90^\circ < \frac{\beta}{2} < 135^\circ$$

$$\rightarrow \frac{\beta}{2} \in \text{IIC}$$

$$\therefore \csc\left(\frac{\beta}{2}\right) = (+)$$

Recuerda:





Determine el valor numérico de:

$$E = (20\cos 180^\circ + 8\csc 90^\circ)^2$$

Recuerda:

R.T	0°; 360°	90°	180°	270°
SEN	0	1	0	-1
COS	1	0	-1	0
TAN	0	N.D	0	N.D
COT	N.D	0	N.D	0
SEC	1	N.D	-1	N.D
CSC	N	1	N.D	-1

Resolución:

$$E = (20\cos 180^\circ + 8\csc 90^\circ)^2$$

$$E = (20(-1) + 8(1))^2$$

$$E = (-20 + 8)^2$$

$$E = (-12)^2$$

$$\therefore E = 144$$





Si $\alpha = 10^\circ$, calcule el valor numérico de:

$$A = 10\csc 9\alpha - 3\cos 36\alpha - 8\tan 18\alpha$$

 **Resolución:**

$$A = 10\csc 9\alpha - 3\cos 36\alpha - 8\tan 18\alpha$$

$$A = 10\csc 90^\circ - 3\cos 360^\circ - 8\tan 180^\circ$$

$$A = 10(1) - 3(1) - 8(0)$$

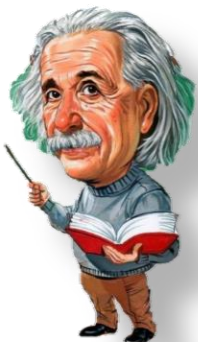
$$A = 10 - 3$$

$$\therefore A = 7$$

 **Recuerda:**

R.T	$0^\circ ; 360^\circ$	90°	180°	270°
SEN	0	1	0	-1
COS	1	0	-1	0
TAN	0	N.D	0	N.D
COT	N.D	0	N.D	0
SEC	1	N.D	-1	N.D
CSC	N	1	N.D	-1

¡Muy bien!





Determine el valor numérico de x si:

$$\text{sen}270^\circ = \frac{7x+13}{5-x}$$

 **Recuerda:**

R.T	$0^\circ ; 360^\circ$	90°	180°	270°
SEN	0	1	0	-1
COS	1	0	-1	0
TAN	0	N.D	0	N.D
COT	N.D	0	N.D	0
SEC	1	N.D	-1	N.D
CSC	N	1	N.D	-1

 **Resolución:**

$$\text{sen}270^\circ = \frac{7x+13}{5-x}$$

$$-1 = \frac{7x+13}{5-x}$$

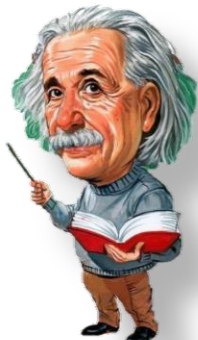
$$-5+x = 7x + 13$$

$$-5-13 = 6x$$

$$-18 = 6x$$

$$\therefore x = -3$$

¡Muy bien!

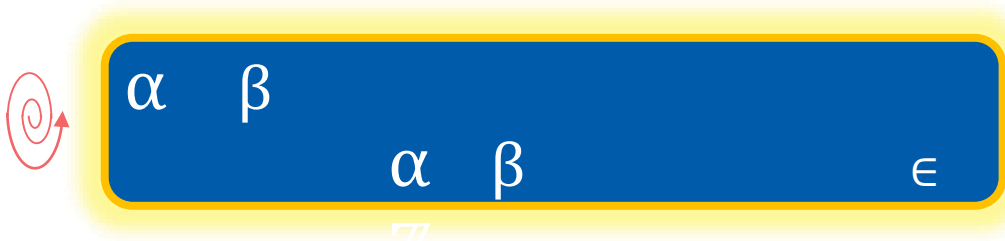




Indique cuáles de los siguientes ángulos son coterminales.

- I. 340° y -200°
- II. 490° y -230°
- III. 710° y 10°

Recuerda:



Resolución:

I $340^\circ - (-200^\circ) = 540^\circ$ (no es múltiplo de 360°)

II $490^\circ - (-230^\circ) = 720^\circ$ (si es múltiplo de 360°)

III $710^\circ - 10^\circ = 700^\circ$ (no es múltiplo de 360°)

∴

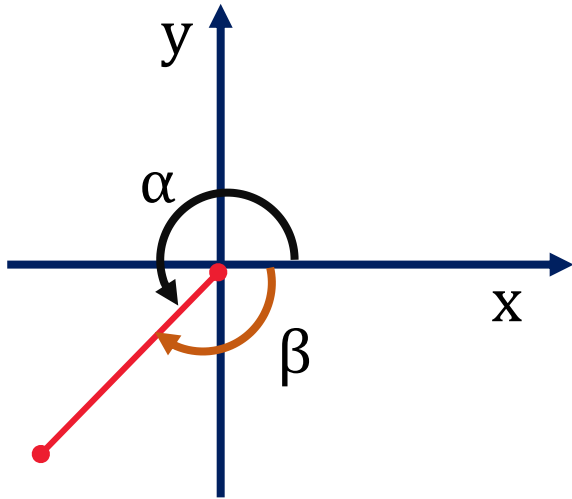
490° y -230° son
ángulos coterminales



HELICO-PRACTICE 8



Del gráfico



$$M = \frac{18\cos\beta}{\cos\alpha} - \frac{5\cot\alpha}{\cot\beta}$$

 **Resolución:**

$$M = \frac{18\cos\beta}{\cos\alpha} - \frac{5\cot\alpha}{\cot\beta}$$

 **Reemplazamos**

$$M = \frac{18\cancel{\cos\beta}}{\cancel{\cos\beta}} - \frac{5\cancel{\cot\alpha}}{\cancel{\cot\alpha}}$$

$$M = 18(1) - 5(1)$$

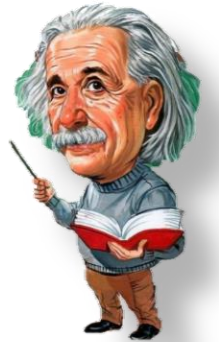
$$\therefore M = 13$$

 **Recuerda:**

$$\cos\alpha = \cos\beta$$

$$\cot\alpha = \cot\beta$$

¡Muy bien!



HELICO-PRACTICE 9



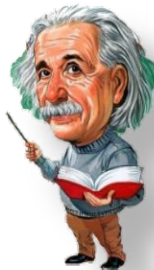
$$\begin{array}{c} \alpha \quad \theta \\ \alpha \end{array}$$

$$N = 5\cot\alpha - \frac{\cot\theta}{5}$$

 **Recuerda:**

$$\cot\alpha = \cot\theta = 1$$

¡Muy bien!



 **Resolución:**

$$N = 5\cot\alpha - \frac{\cot\theta}{5}$$

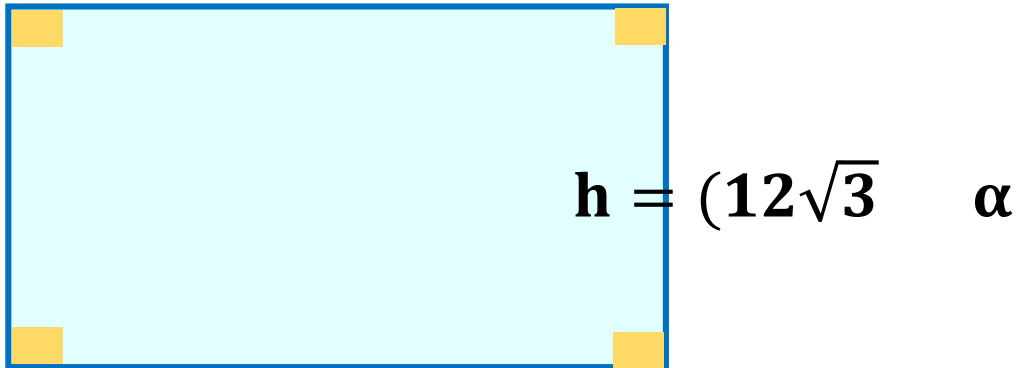
$$N = 5\cot\alpha - \frac{\cot\alpha}{5}$$

$$N = 5(1) - \frac{(1)}{5}$$

$$\therefore M = \frac{24}{5}$$

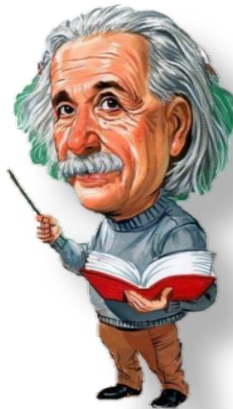


Lucia compró un terreno en forma de rectángulo, tal como se muestra en la figura.



$$b = (30 \text{ sen } \alpha)$$

Si α y 30° son ángulos coterminales, ¿cuál es el área de dicho terreno?



Resolución

Por propiedad de ángulos coterminales
 $RT(\alpha) = RT(30^\circ)$

Entonces:

$$b = 30 \text{ sen } \alpha$$

$$b = 30 \text{ sen } 30^\circ$$

$$b = 30(1/2)$$

$$b = 15 \text{ m}$$

$$\sqrt{3} \tan \alpha$$

$$12\sqrt{3} \tan 30^\circ$$

$$12\cancel{\sqrt{3}} \cdot \frac{1}{\cancel{\sqrt{3}}}$$

$$12 \text{ m}$$

Reemplazar:

$$S = (15 \text{ m})(12 \text{ m})$$



El área del terreno es 180 m^2