



Materiales Educativos GRATIS

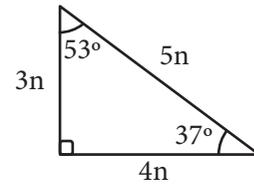
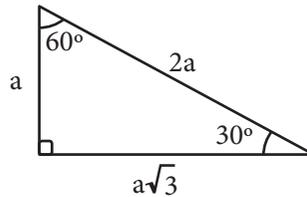
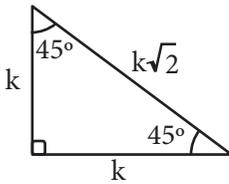
TRIGONOMETRIA

CUARTO

RAZONES TRIGONOMÉTRICAS DE ÁNGULOS NOTABLES

Los triángulos rectángulos de ángulos notables o simplemente triángulos rectángulos notables, son aquellos en los cuales conociendo las medidas de sus ángulos agudos se puede saber en qué proporción se encuentran sus lados.

Destacan:



A partir de estos triángulos, se calculan las razones trigonométricas de sus correspondientes ángulos:

	$45^\circ <> \frac{\pi}{4}$	$30^\circ <> \frac{\pi}{6}$	$60^\circ <> \frac{\pi}{3}$	37°	53°
Sen	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{3}{5}$	$\frac{4}{5}$
Cos	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{4}{5}$	$\frac{3}{5}$
Tan	1	$\frac{1}{\sqrt{3}}$	$\sqrt{3}$	$\frac{3}{4}$	$\frac{4}{3}$
Cot	1	$\sqrt{3}$	$\frac{1}{\sqrt{3}}$	$\frac{4}{3}$	$\frac{3}{4}$
Sec	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	2	$\frac{5}{4}$	$\frac{5}{3}$
Csc	$\sqrt{2}$	2	$\frac{2}{\sqrt{3}}$	$\frac{5}{3}$	$\frac{5}{4}$

Trabajando en clase

Integral

- Calcula:

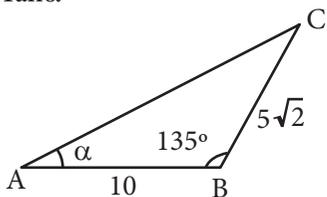
$$M = \tan 45^\circ + 2\cos 60^\circ - 8\csc 53^\circ$$
- Calcula:

$$E = \frac{(\sec 45^\circ)^{\sec 60^\circ} + (\cot 30^\circ)^{\sec 60^\circ}}{4\tan 37^\circ}$$
- Halla el valor de « α » sabiendo que es un ángulo agudo.

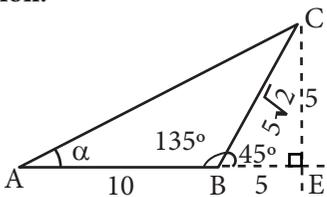
$$\tan(\alpha + 5^\circ) = \sqrt{2\sin 30^\circ + \sec 245^\circ}$$

PUCP

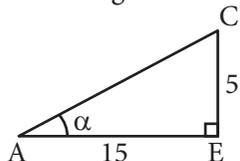
- Calcula $\tan \alpha$



Resolución:

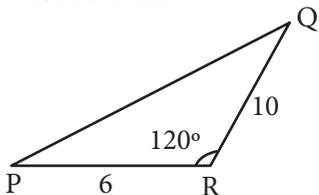


Del triángulo ACE

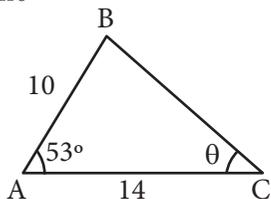


$$\tan \alpha = \frac{5}{15} = \frac{1}{3}$$

- Obtén el valor de $\tan x$.



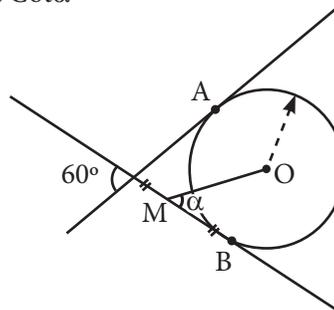
- Calcula $8\tan \theta$



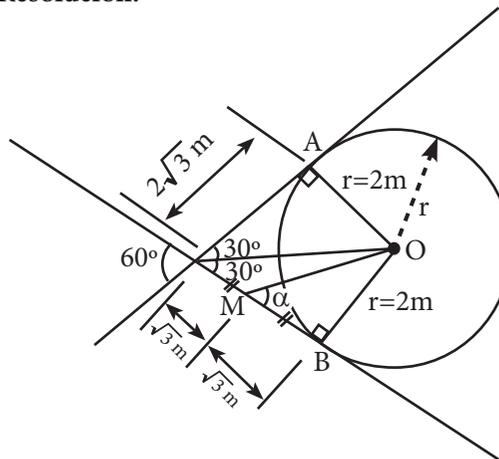
- Si $\tan \alpha = \sin 30^\circ + \cot 45^\circ$
 Calcula: $E = \sqrt{13} \sin \alpha - \tan(90^\circ - \alpha)$

UNMSM

- Calcula $\cot \alpha$

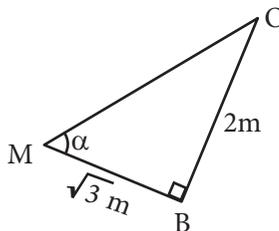


Resolución:



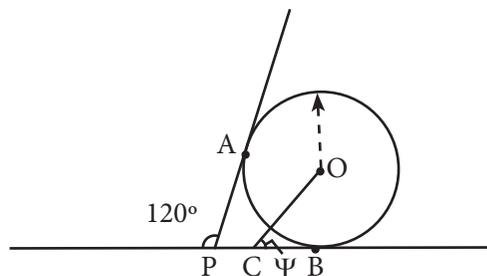
Sea $r = 2m$

Del triángulo MBO.

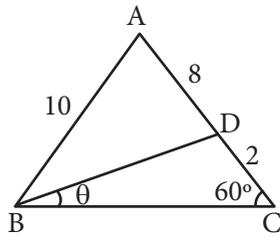


$$\cot \alpha = \frac{\sqrt{3}m}{2m} = \frac{\sqrt{3}}{2}$$

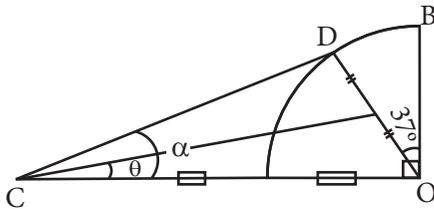
- Calcula $\tan \Psi$ ($BC = 2PC$)



10. Calcula $\text{Cot } \theta$

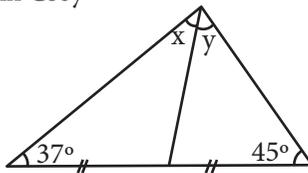


11. Calcula: $E = \text{Cot } \theta - \text{Cot } \alpha$

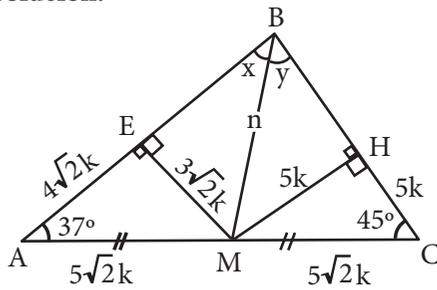


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12. Halla $\text{Senx} \cdot \text{Cscy}$



Resolución:



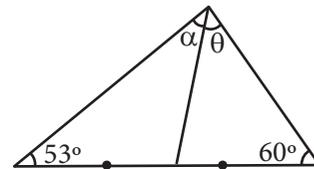
- ❖ Trazamos MH
- ❖ Trazamos ME
- ❖ Sea: $\overline{AM} = 5\sqrt{2}k$
- ❖ Sea: $\overline{BM} = n$

Piden: $\text{Senx} \cdot \text{Cscy}$

$$\frac{3\sqrt{2}k}{n} \cdot \frac{n}{5k}$$

$$\frac{3\sqrt{2}}{5}$$

13. Halla el valor de: $\text{Csc}\alpha \cdot \text{Sen}\theta$.



14. Calcula $\text{Tan}\alpha$

