

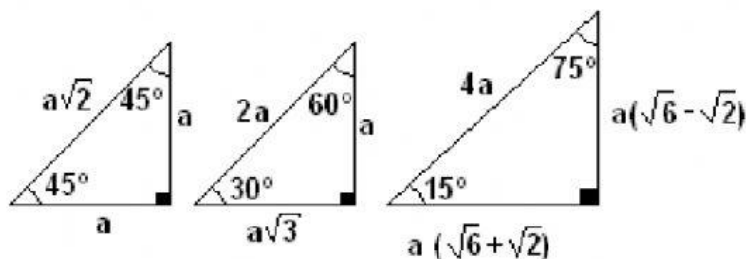


MATEMÁTICA

IV SECUNDARIA

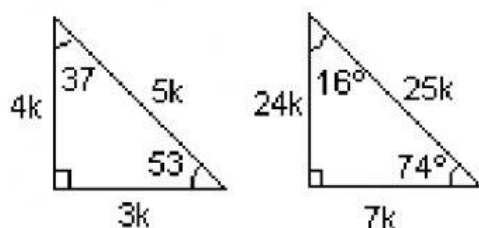
Ficha 11: Razones trigonométricas de ángulos notables

RAZONES TRIGONOMÉTRICAS DE 15°, 30°, 45°, 60° y 75°



Ángulo	15°	30°	45°	60°	75°
Seno	$(\sqrt{6}-\sqrt{2})/4$	$1/2$	$\sqrt{2}/2$	$\sqrt{3}/2$	$(\sqrt{6}+\sqrt{2})/4$
Coseno	$(\sqrt{6}+\sqrt{2})/4$	$\sqrt{3}/2$	$\sqrt{2}/2$	$1/2$	$(\sqrt{6}-\sqrt{2})/4$
Tangente	$2-\sqrt{3}$	$\sqrt{3}/3$	1	$\sqrt{3}$	$2+\sqrt{3}$
Cotangente	$2+\sqrt{3}$	$\sqrt{3}$	1	$\sqrt{3}/3$	$2-\sqrt{3}$
Secante	$\sqrt{6}-\sqrt{2}$	$2\sqrt{3}/3$	$\sqrt{2}$	2	$\sqrt{6}+\sqrt{2}$
Cosecante	$\sqrt{6}+\sqrt{2}$	2	$\sqrt{2}$	$2\sqrt{3}/3$	$\sqrt{6}-\sqrt{2}$

RAZONES TRIGONOMÉTRICAS DE 37°, 53°, 16° y 74°

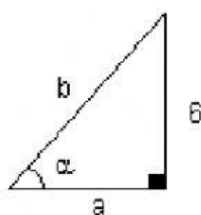


	37°	53°	16°	74°
Seno	$\frac{3}{5}$	$\frac{4}{5}$	$\frac{7}{25}$	$\frac{24}{25}$
Coseno	$\frac{4}{5}$	$\frac{3}{5}$	$\frac{24}{25}$	$\frac{7}{25}$
Tangente	$\frac{3}{4}$	$\frac{4}{3}$	$\frac{7}{24}$	$\frac{24}{7}$
Cotangente	$\frac{4}{3}$	$\frac{3}{4}$	$\frac{24}{7}$	$\frac{7}{24}$
Secante	$\frac{5}{4}$	$\frac{5}{3}$	$\frac{25}{24}$	$\frac{25}{7}$
Cosecante	$\frac{5}{3}$	$\frac{5}{4}$	$\frac{25}{7}$	$\frac{25}{24}$



EJERCICIOS DE APLICACIÓN

1. Calcula "x" en: $(x+2) \cos 60^\circ = 6$
2. Si $\tan x = \frac{1}{2}$ calcula $M = \sqrt{5} \cos x + \cot x$
3. Si $\tan \alpha = \frac{1}{3}$; En la figura, calcula "a + b"



4. En un triángulo rectángulo ABC (recto en B).
Reduce
$$E = \frac{\operatorname{Sen} A + \operatorname{Cos} A}{\operatorname{Sen} C + \operatorname{Cos} C}$$
5. Si: $7 = 7^{1 + \operatorname{Sen} \theta - \operatorname{Cos} \alpha}$.
Calcula
$$\frac{\operatorname{Ctg} \frac{\alpha + \theta}{2} + 2 \operatorname{Tan} \theta}{2 \operatorname{Ctg} \alpha + 1}$$
6. Calcula E en: $E = 7(\operatorname{Sen} 53^\circ + \operatorname{Sen} 37^\circ)^{-1} + \operatorname{Sec} 60^\circ$
7. Si: $\operatorname{Tg} \alpha = \frac{24}{7}$
Calcula $\operatorname{Sen} \alpha + \operatorname{Cos} \alpha$ (α es ángulo agudo)
8. Si $\alpha = 15^\circ$
Calcula $L = \operatorname{Sen} \alpha \operatorname{Sen} 2\alpha \cdot \operatorname{Sen} 3\alpha \cdot \operatorname{Sen} 4\alpha \cdot \operatorname{Sec} 5\alpha$
9. Calcula x en: $\operatorname{Cos} 60^\circ + \operatorname{Sec} 60^\circ = \operatorname{Tan}^2 60^\circ - x \operatorname{Sen} 30^\circ$