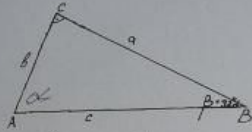


ТРИГОНОМЕТРИЧНИ

Функции



$$\sin \alpha = \frac{a}{c} \quad \operatorname{tg} \alpha = \frac{a}{b}$$

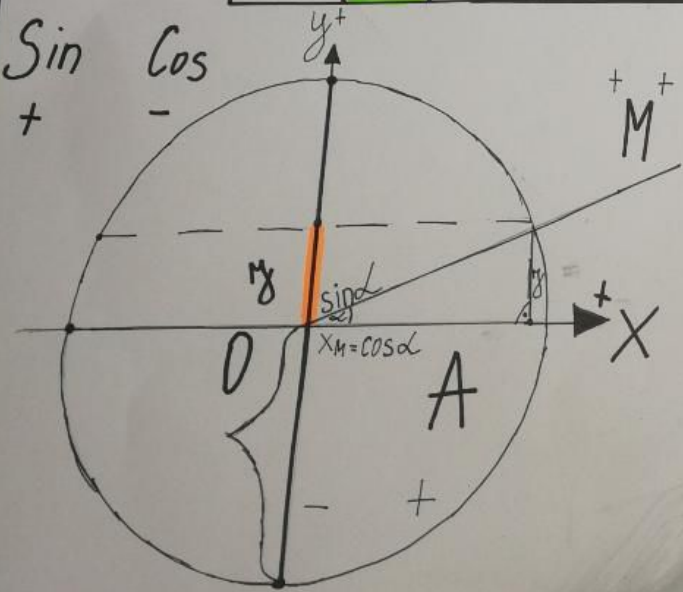
$$\cos \alpha = \frac{b}{c} \quad \operatorname{cotg} \alpha = \frac{b}{a}$$

$a^2 + b^2 = c^2$  — ПИТАГОРОВА ТЕОРЕМА  
 $\sin^2 \alpha + \cos^2 \alpha = 1$      $\sin^2 \alpha + 1 - \cos^2 \alpha = 1 \Rightarrow \cos^2 \alpha = 1 - \sin^2 \alpha \Rightarrow$   
 $\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha}; \operatorname{cotg} \alpha = \frac{\cos \alpha}{\sin \alpha};$

$$\operatorname{tg} \alpha \cdot \operatorname{cotg} \alpha = 1, \operatorname{cotg} \alpha = \frac{1}{\operatorname{tg} \alpha}$$

$\operatorname{tg} \alpha \cdot \operatorname{cotg} \alpha = 1, \operatorname{cotg} \alpha = \frac{1}{\operatorname{tg} \alpha}$
$\sin(180^\circ - \alpha) = \sin \alpha$ $\sin(90^\circ + \alpha) = \cos \alpha$ $\sin(90^\circ - \alpha) = \cos \alpha$
$\cos(180^\circ - \alpha) = -\cos \alpha$ $\cos(90^\circ + \alpha) = -\sin \alpha$ $\cos(90^\circ - \alpha) = \sin \alpha$
$\operatorname{tg}(180^\circ - \alpha) = -\operatorname{tg} \alpha$ $\operatorname{tg}(90^\circ + \alpha) = \operatorname{cotg} \alpha$ $\operatorname{tg}(90^\circ - \alpha) = \operatorname{cotg} \alpha$
$\operatorname{cotg}(180^\circ - \alpha) = \operatorname{cotg} \alpha$ $\operatorname{cotg}(90^\circ + \alpha) = -\operatorname{tg} \alpha$ $\operatorname{cotg}(90^\circ - \alpha) = -\operatorname{tg} \alpha$

$\alpha$	$0^\circ$	$30^\circ$	$45^\circ$	$60^\circ$	$90^\circ$	$120^\circ$	$135^\circ$	$150^\circ$	$180^\circ$
$\sin \alpha$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\cos \alpha$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{3}}{2}$	-1
$\operatorname{tg} \alpha$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$		$-\sqrt{3}$	-1	$-\frac{\sqrt{3}}{3}$	0
$\operatorname{cotg} \alpha$		$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	$-\frac{\sqrt{3}}{3}$	-1	$-\sqrt{3}$	



$$\Rightarrow \sin \alpha = \sqrt{1 - \cos^2 \alpha}, \text{ при } \alpha \in [0^\circ; 180^\circ]$$

$$\Rightarrow \cos \alpha = \begin{cases} +\sqrt{1 - \sin^2 \alpha}, \text{ при } \alpha \in [0^\circ; 90^\circ] \\ -\sqrt{1 - \sin^2 \alpha}, \text{ при } \alpha \in [90^\circ; 180^\circ] \end{cases}$$

ИЗГОТВЕНО ОТ: МИНА НЕЛЕВА.