

3 GONIOMETRIA

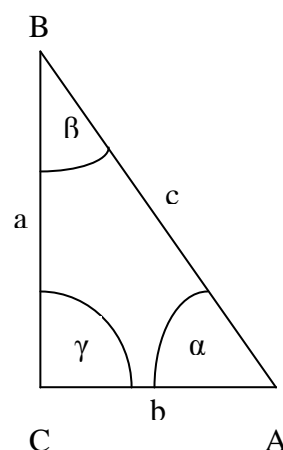
Uvedieme iba niektoré definície, resp. vlastnosti.

- Pre každé celé číslo k a pre každé reálne číslo x platí:

- $\sin(x + k \cdot 2\pi) = \sin x$, $\cos(x + k \cdot 2\pi) = \cos x$.
- $|\cos x| \leq 1$, $|\sin x| \leq 1$.
- $\sin(-x) = -\sin x$, $\cos(-x) = \cos x$.
- $\sin^2 x + \cos^2 x = 1$.
- $\sin(x \pm y) = \sin x \cos y \pm \sin y \cos x$.
- $\cos(x \pm y) = \cos x \cos y \mp \sin x \sin y$.
- $\sin 2x = 2 \sin x \cos x$,
- $\cos 2x = \cos^2 x - \sin^2 x$.
- $\left| \sin \frac{x}{2} \right| = \sqrt{\frac{1 - \cos x}{2}}$, $\left| \cos \frac{x}{2} \right| = \sqrt{\frac{1 + \cos x}{2}}$.
- $\operatorname{tg} x = \frac{\sin x}{\cos x}$, $\operatorname{cotg} x = \frac{\cos x}{\sin x}$.

- V pravouhlom trojuholníku s odvesnami a, b a preponou c je:

$$\sin \alpha = \frac{a}{c}, \quad \cos \alpha = \frac{b}{c}, \quad \operatorname{tg} \alpha = \frac{a}{b}, \quad \operatorname{cotg} \alpha = \frac{b}{a}.$$



- Pre každý trojuholník ABC , ktorého vnútorné uhly majú veľkosti α, β, γ a strany a, b, c platí:

- $\frac{a}{\sin \alpha} = \frac{b}{\sin \beta} = \frac{c}{\sin \gamma}$ - veta sínusová.
- $a^2 = b^2 + c^2 - 2bc \cos \alpha$,
- $b^2 = a^2 + c^2 - 2ac \cos \beta$,
- $c^2 = a^2 + b^2 - 2ab \cos \gamma$.

