

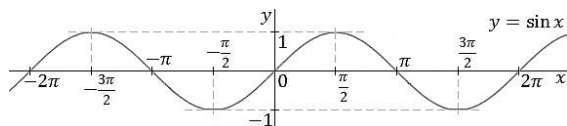
# GONIOMETRICKÉ FUNKCE

## SINUS

$$f: y = \sin x$$

$$D(f) = \mathbf{R}$$

$$H(f) = \langle -1, 1 \rangle$$

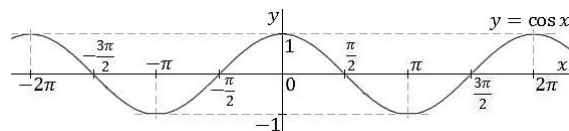


## KOSINUS

$$f: y = \cos x$$

$$D(f) = \mathbf{R}$$

$$H(f) = \langle -1, 1 \rangle$$

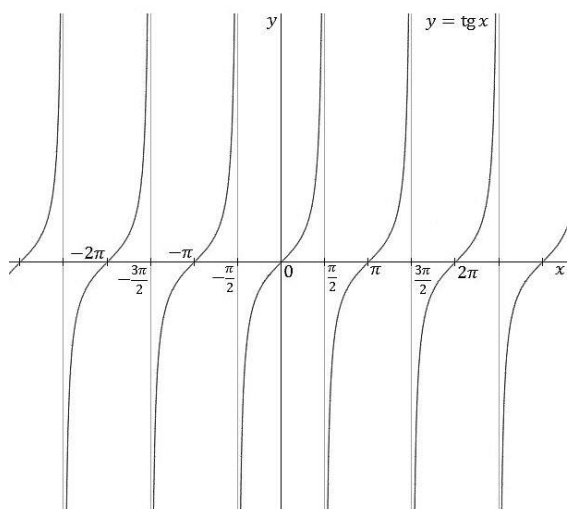


## TANGENS

$$f: y = \operatorname{tg} x = \frac{\sin x}{\cos x}$$

$$D(f) = \mathbf{R} - \left\{ (2k + 1)\frac{\pi}{2}; k \in \mathbf{Z} \right\}$$

$$H(f) = \mathbf{R}$$

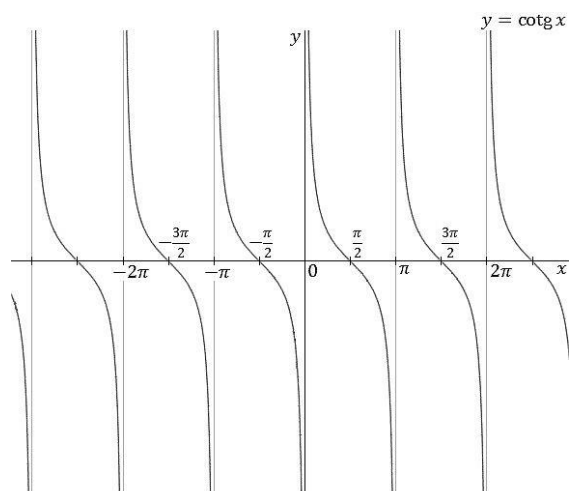


## KOTANGENS

$$f: y = \operatorname{cotg} x = \frac{\cos x}{\sin x}$$

$$D(f) = \mathbf{R} - \{k\pi; k \in \mathbf{Z}\}$$

$$H(f) = \mathbf{R}$$



Tabulka významných hodnot:

	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$	$\pi$	$\frac{3\pi}{2}$
$\sin x$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	0	-1
$\cos x$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	-1	0
$\operatorname{tg} x$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	—	0	—
$\operatorname{cotg} x$	—	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	—	0

Důležité vzorce:

$$1 = \sin^2 x + \cos^2 x$$

$$\sin 2x = 2 \sin x \cos x$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$\sin^2 \frac{x}{2} = \frac{1 - \cos x}{2}$$

$$\cos^2 \frac{x}{2} = \frac{1 + \cos x}{2}$$