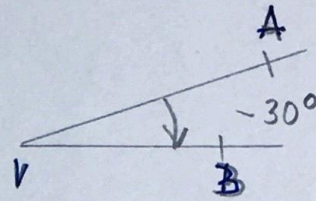
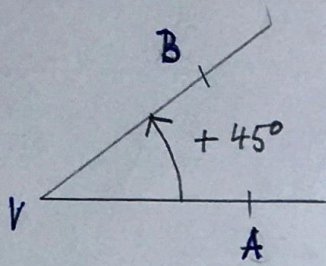


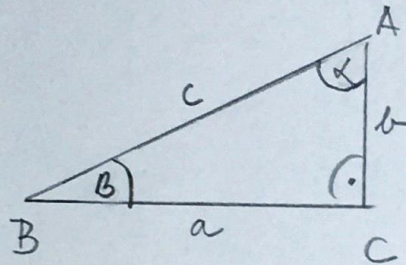
GONIOMETRICKÉ FUNKCE

orientovaný úhel:



$\rightarrow VA \dots$ počáteční rameno
 $\rightarrow VB \dots$ koncové rameno
 hlásný směr = směr proti
 pohybu hodinových
 ručiček

goniometrické funkce ostřihového úhlu:

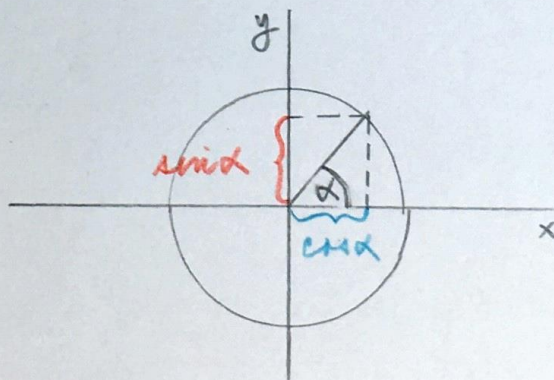


$$\sin \alpha = \frac{a}{c}$$

$$\cos \alpha = \frac{b}{c}$$

$$\tan \alpha = \frac{a}{b}$$

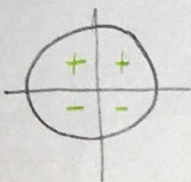
funkce sinus
a kosinus



sinus

$$D = R$$

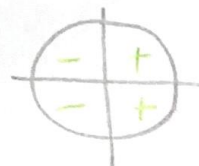
$$H = \langle -1; 1 \rangle$$



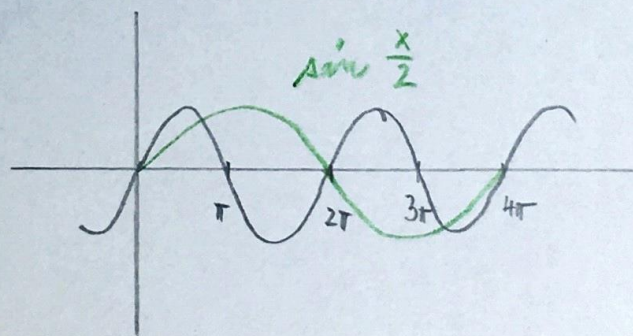
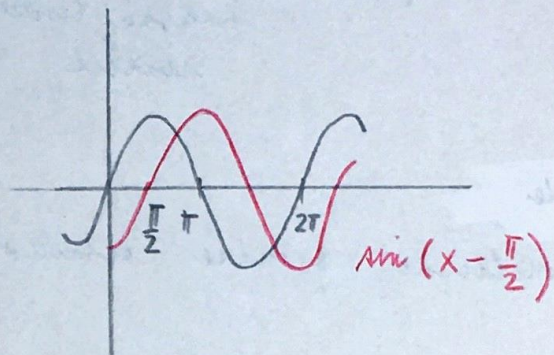
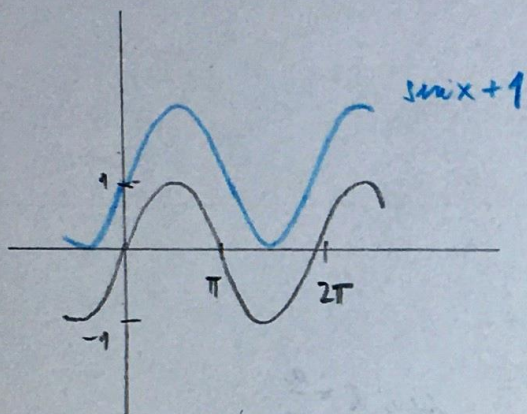
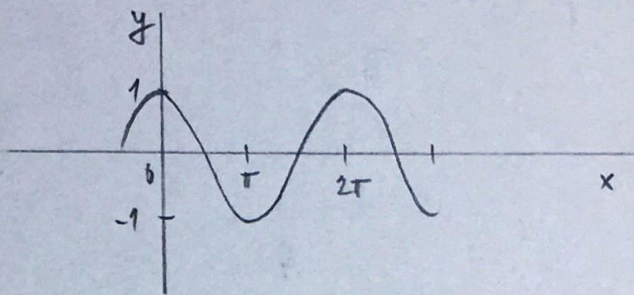
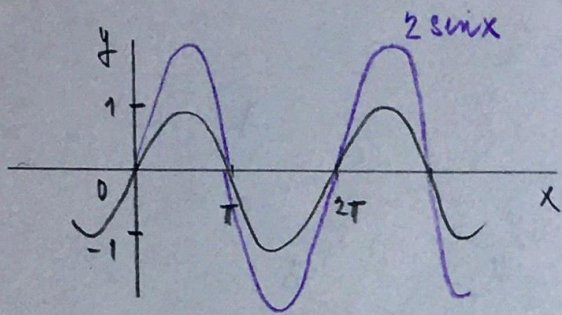
kosinus

$$D = R$$

$$H = \langle -1; 1 \rangle$$



grafy:



funkce tangens a kotangens:

$$\operatorname{tg} x = \frac{\sin x}{\cos x}$$

$$\operatorname{ctg} x = \frac{\cos x}{\sin x}$$

D!

$$D = \mathbb{R} \setminus \{(2k+1) \cdot \frac{\pi}{2}; k \in \mathbb{Z}\}$$

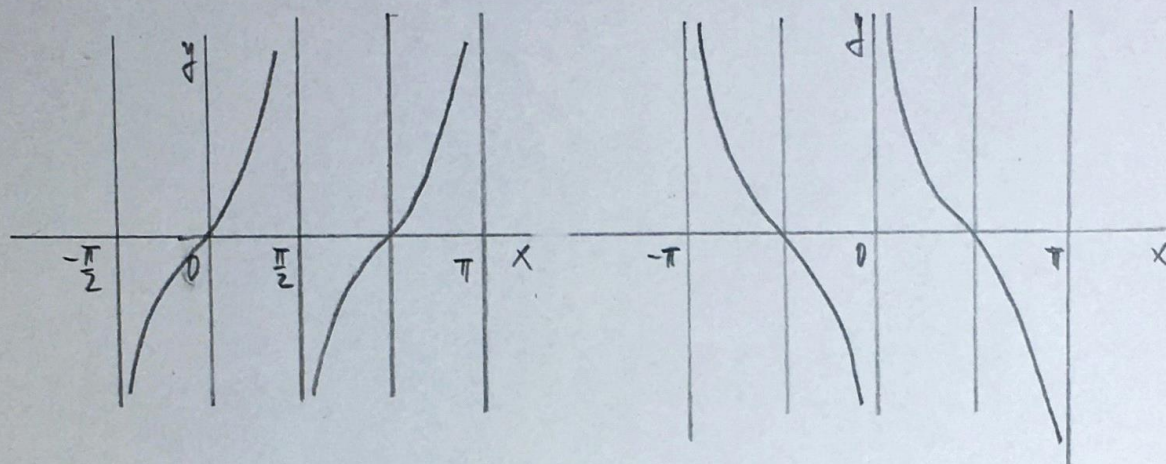
$$\checkmark \cos x \neq 0$$

$$H = \mathbb{R}$$

$$D = \mathbb{R} \setminus \{k\pi; k \in \mathbb{Z}\}$$

$$\checkmark \sin x \neq 0$$

$$H = \mathbb{R}$$



hodnoty funkcí: (1. kvadrant)

	0	$\frac{\pi}{6}$	$\frac{\pi}{4}$	$\frac{\pi}{3}$	$\frac{\pi}{2}$
$\sin x$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos x$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\operatorname{tg} x$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	/
$\operatorname{ctg} x$	/	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0

základní rovnice:

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

$$\operatorname{tg} x = \frac{1}{\operatorname{ctg} x}$$

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

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