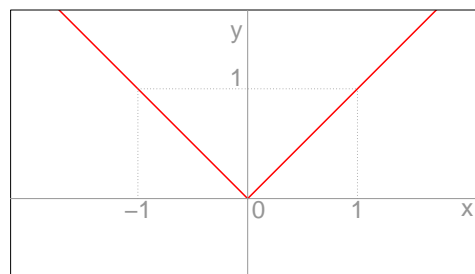


## • ABSOLUTNÍ HODNOTA

$$f(x) = |x|$$

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

$$H(f) = \mathbb{R}_0^+$$



## • LINEÁRNÍ FUNKCE

$$f(x) = ax + b$$

$b$  ... průsečík s osou  $y$

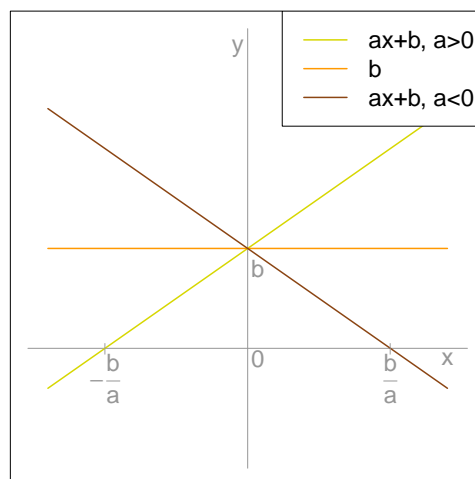
$a$  ... směrnice:

$a > 0$  ... rostoucí přímka

$a < 0$  ... klesající přímka

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

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



## • KVADRATICKÁ FUNKCE

$$f(x) = ax^2 + bx + c$$

$a > 0$  ... konvexní (otevřena nahoru)

$a < 0$  ... konkávní (otevřena dolů)

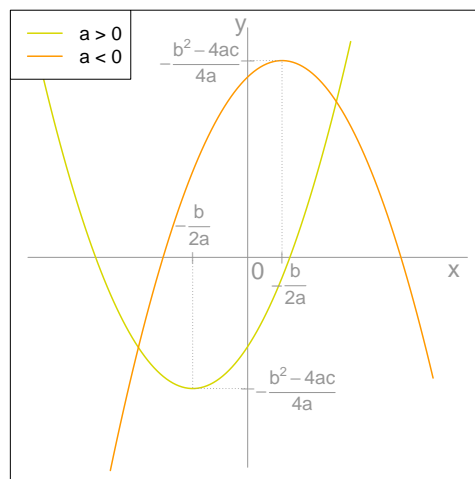
$c$  ... průsečík s osou  $y$

souřadnice vrcholu:  $V = \left[-\frac{b}{2a}, -\frac{b^2-4ac}{4a}\right]$

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

$$H(f) = \left[-\frac{b^2-4ac}{4a}, \infty\right) \text{ pro } a > 0$$

$$H(f) = \left(-\infty, -\frac{b^2-4ac}{4a}\right] \text{ pro } a < 0$$

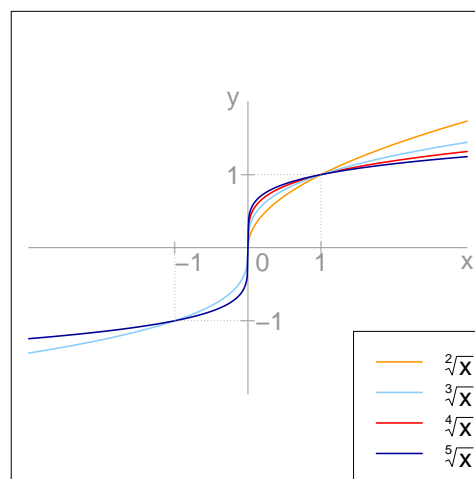


## • ODMOCNINA

$$f(x) = \sqrt[n]{x} \quad n \in \mathbb{N}$$

$n$  sudé:  $D(f) = [0, +\infty)$ ,  $H(f) = [0, +\infty)$

$n$  liché:  $D(f) = \mathbb{R}$ ,  $H(f) = \mathbb{R}$

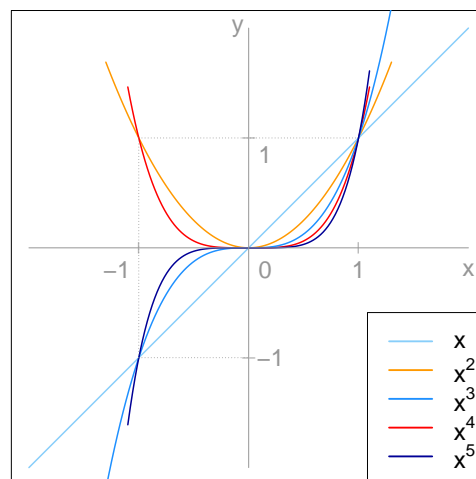


### • MOCNINNÁ FUNKCE I

$$f(x) = f(x) = x^n, \quad n \in \mathbb{N}$$

$n$  sudé:  $D(f) = \mathbb{R}, H(f) = \mathbb{R}_0^+$

$n$  liché:  $D(f) = \mathbb{R}, H(f) = \mathbb{R}$

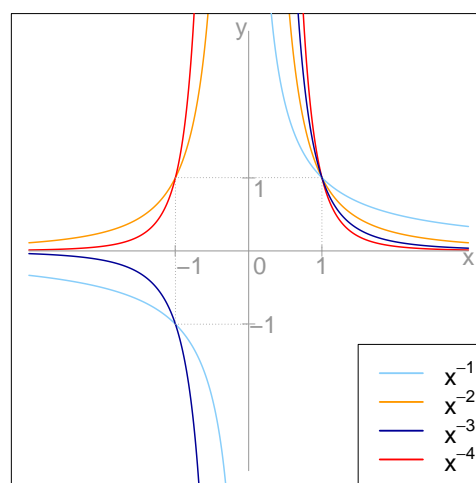


### • MOCNINNÁ FUNKCE II

$$f(x) = x^{-n}, \quad n \in \mathbb{N}$$

$n$  sudé:  $D(f) = \mathbb{R} - \{0\}, H(f) = \mathbb{R}^+$

$n$  liché:  $D(f) = \mathbb{R} - \{0\}, H(f) = \mathbb{R} - \{0\}$



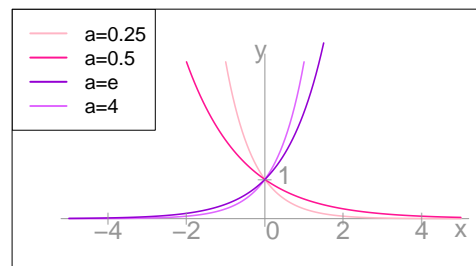
### • EXPONENCIÁLNÍ FUNKCE

$f(x) = a^x$ ,  $a \in (0, 1) \dots$  klesající funkce

$f(x) = a^x$ ,  $a > 1 \dots$  rostoucí funkce, typicky  $f(x) = e^x$

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

$H(f) = \mathbb{R}^+$



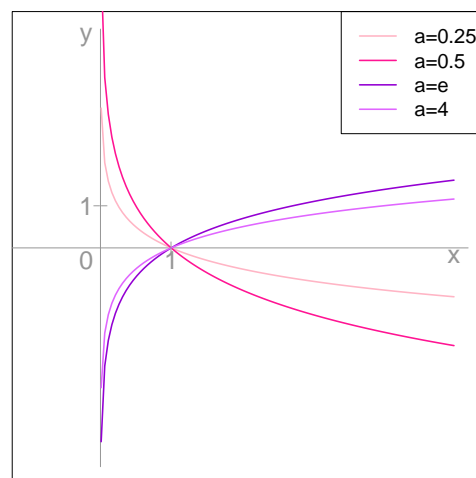
### • LOGARITMICKÁ FUNKCE

$f(x) = \log_a x$ ,  $a \in (0, 1) \dots$  klesající funkce

$f(x) = \log_a x$ ,  $a > 1 \dots$  rostoucí funkce, typicky  $f(x) = \ln x$

$D(f) = \mathbb{R}^+$

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



- GONIOMETRICKÉ FUNKCE I

$$f(x) = \sin(x)$$

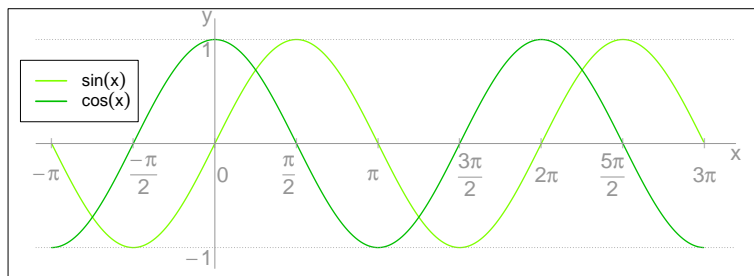
$$D(f) = \mathbb{R}$$

$$H(f) = [-1, 1]$$

$$f(x) = \cos(x)$$

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

$$H(f) = [-1, 1]$$



- GONIOMETRICKÉ FUNKCE II

$$f(x) = \operatorname{tg}(x)$$

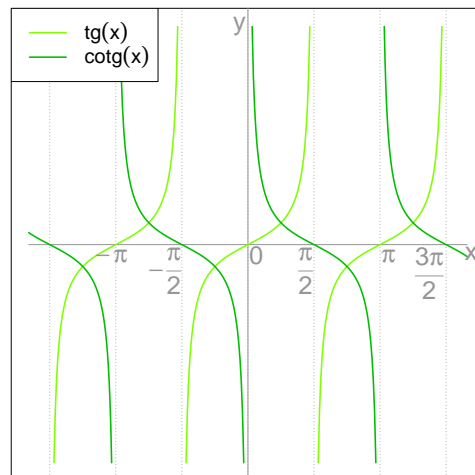
$$D(f) = \mathbb{R} - \{(2k+1)\frac{\pi}{2}, k \in \mathbb{Z}\}$$

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

$$f(x) = \operatorname{cotg}(x)$$

$$D(f) = \mathbb{R} - \{k\pi, k \in \mathbb{Z}\}$$

$$H(f) = [-1, 1]$$



- CYKLOMETRICKÉ FUNKCE I

$$f(x) = \arcsin(x)$$

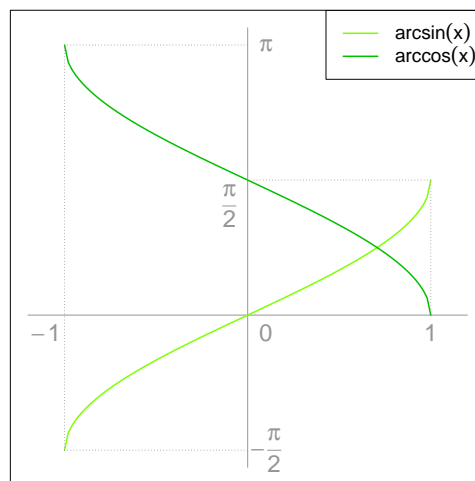
$$D(f) = [-1, 1]$$

$$H(f) = [-\frac{\pi}{2}, \frac{\pi}{2}]$$

$$f(x) = \arccos(x)$$

$$D(f) = [-1, 1]$$

$$H(f) = [0, \pi]$$



- CYKLOMETRICKÉ FUNKCE II

$$f(x) = \operatorname{arctg}(x)$$

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

$$H(f) = (-\frac{\pi}{2}, \frac{\pi}{2})$$

$$f(x) = \operatorname{arccotg}(x)$$

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

$$H(f) = (0, \pi)$$

