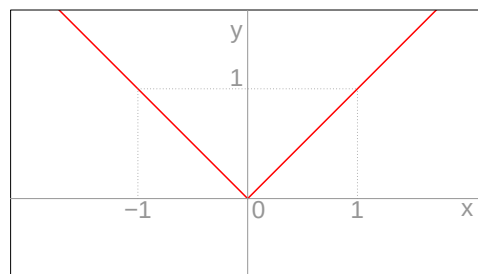


• ABSOLUTNÍ HODNOTA

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

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

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



• LINEÁRNÍ FUNKCE

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

b ... průsečík s osou y

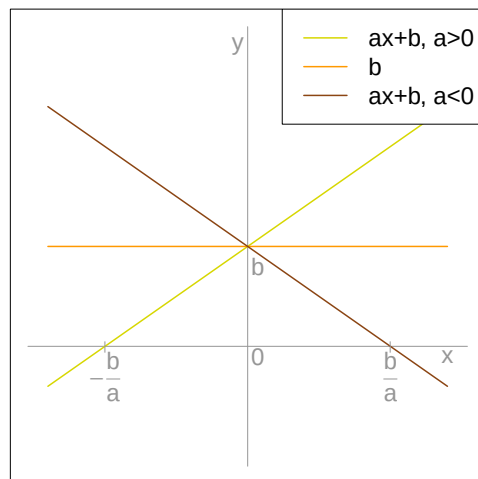
a ... směrnice:

$a > 0$... 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)

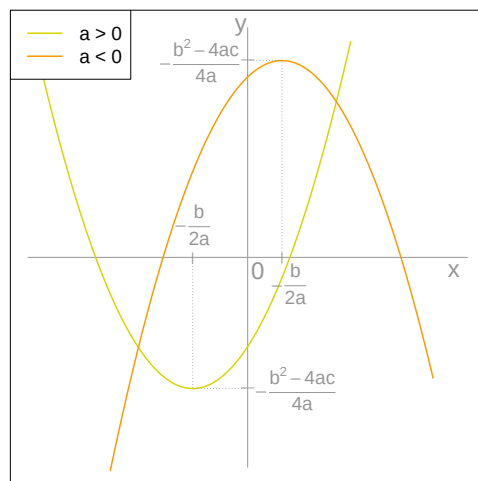
c ... průsečík s osou y

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

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

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

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

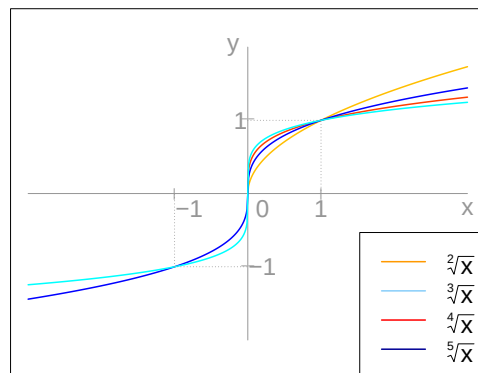


• ODMOCNINA

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

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

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

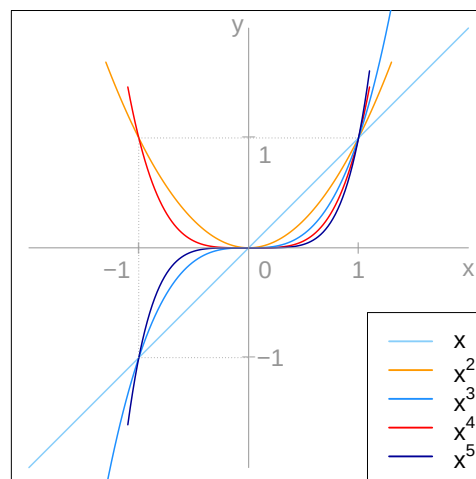


• MOCNINNÁ FUNKCE I

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

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

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

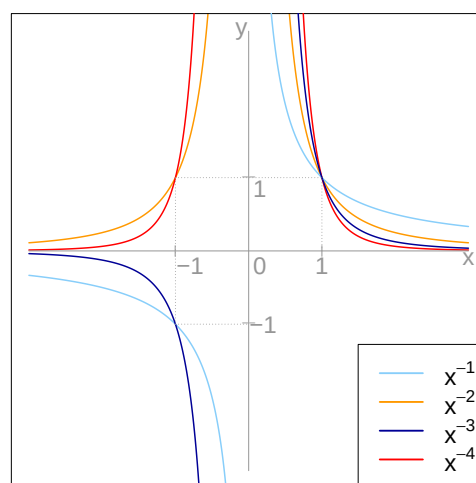


• MOCNINNÁ FUNKCE II

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

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

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



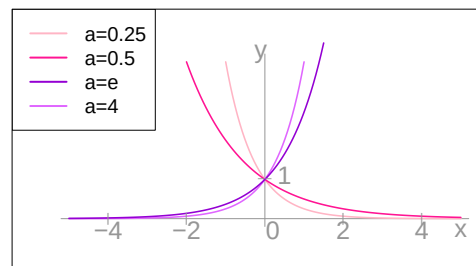
• EXPONENCIÁLNÍ FUNKCE

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

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

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

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



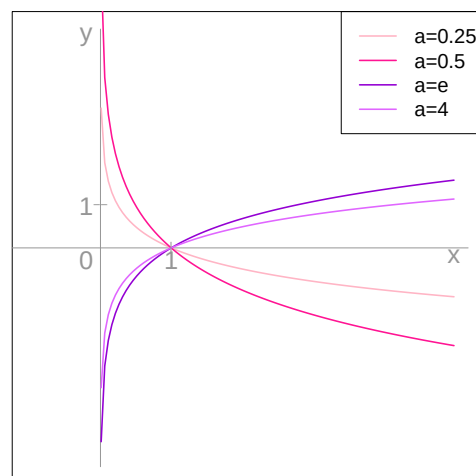
• LOGARITMICKÁ FUNKCE

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

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

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

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



• GONIOMETRICKÉ FUNKCE I

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

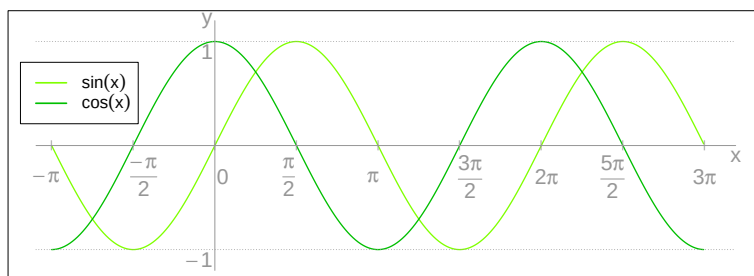
$$D(f) = \mathbb{R}$$

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

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

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

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



• GONIOMETRICKÉ FUNKCE II

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

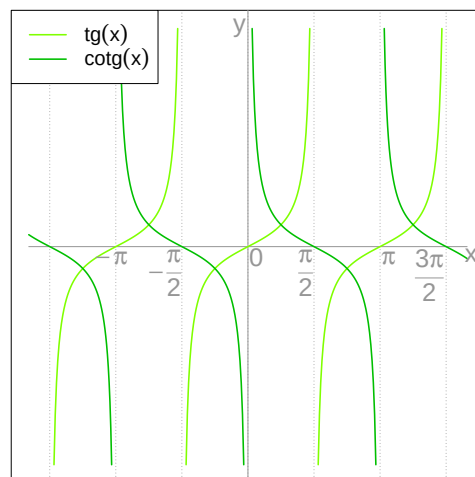
$$D(f) = \mathbb{R} - \{(2k+1)\frac{\pi}{2}, k \in \mathbb{Z}\}$$

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

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

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

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



• CYKLOMETRICKÉ FUNKCE I

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

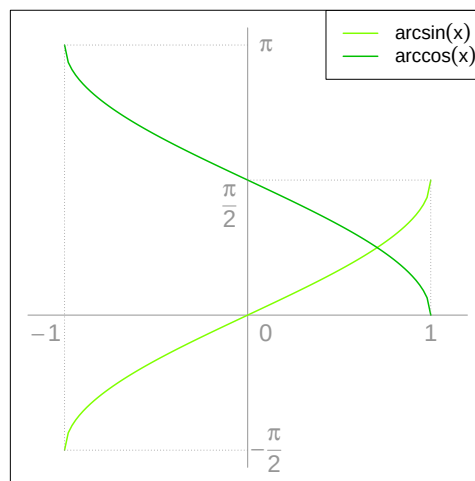
$$D(f) = [-1, 1]$$

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

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

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

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



• CYKLOMETRICKÉ FUNKCE II

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

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

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

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

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

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

