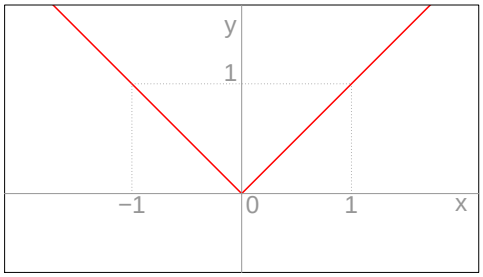
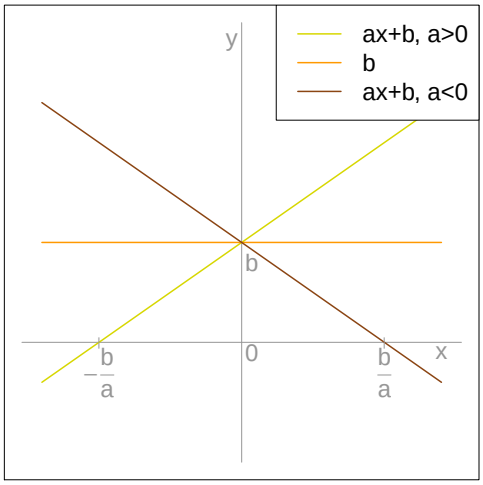
- **ABSOLUTNÍ HODNOTA**

$\boxed{f(x) = |x|}$
$D(f) = \mathbb{R}$
$H(f) = \mathbb{R}_0^+$



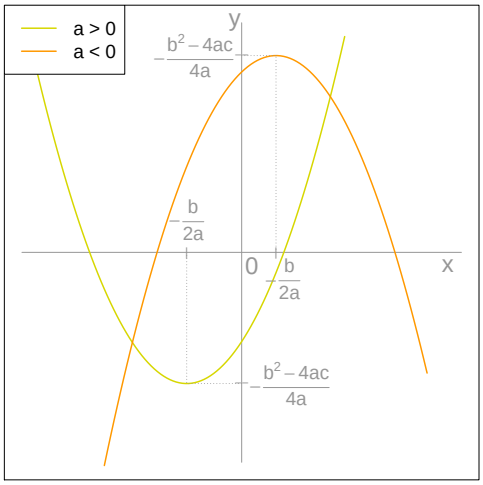
- **LINEÁRNÍ FUNKCE**

$\boxed{f(x) = ax + b}$
b ... průsečík s osou y
a ... směrnice:
$a > 0$... rostoucí přímka
$a < 0$... klesající přímka
$D(f) = \mathbb{R}$
$H(f) = \mathbb{R}$



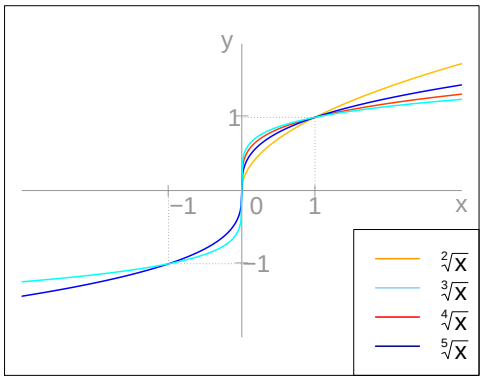
- **KVADRATICKÁ FUNKCE**

$\boxed{f(x) = ax^2 + bx + c}$
$a > 0$... konvexní (otevřena nahoru)
$a < 0$... konkávní (otevřena dolů)
c ... průsečík s osou y
souřadnice vrcholu: $V = \left[-\frac{b}{2a}, -\frac{b^2-4ac}{4a}\right]$
$D(f) = \mathbb{R}$
$H(f) = \left[-\frac{b^2-4ac}{4a}, \infty\right)$ pro $a > 0$
$H(f) = \left(-\infty, -\frac{b^2-4ac}{4a}\right]$ pro $a < 0$



- **ODMOCNINA**

$\boxed{f(x) = \sqrt[n]{x}}$ $n \in \mathbb{N}$
n sudé: $D(f) = [0, +\infty)$, $H(f) = [0, +\infty)$
n liché: $D(f) = \mathbb{R}$, $H(f) = \mathbb{R}$

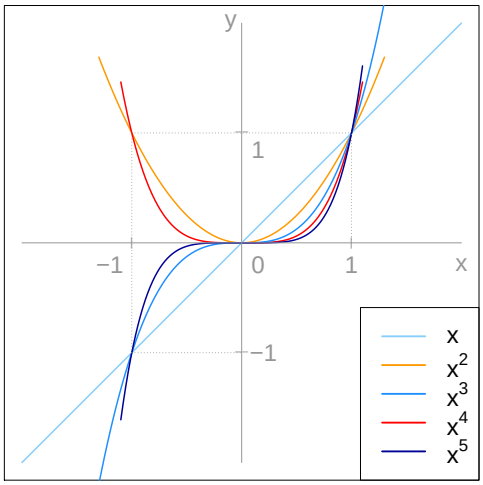


- **MOCNINNÁ FUNKCE I**

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

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

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

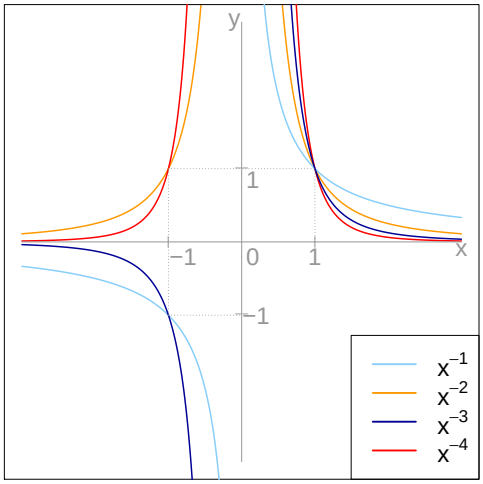


- **MOCNINNÁ FUNKCE II**

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

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

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



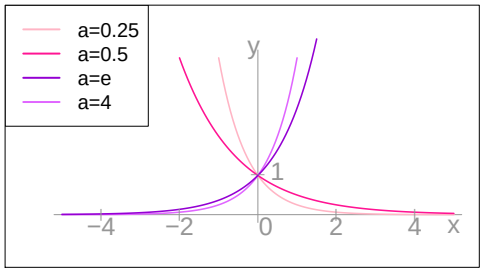
- **EXPONENCIÁLNÍ FUNKCE**

$\boxed{f(x) = a^x}$, $a \in (0,1)$ ... klesající funkce

$\boxed{f(x) = a^x}$, $a > 1$ ... rostoucí funkce, typicky $f(x) = \mathrm{e}^x$

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

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



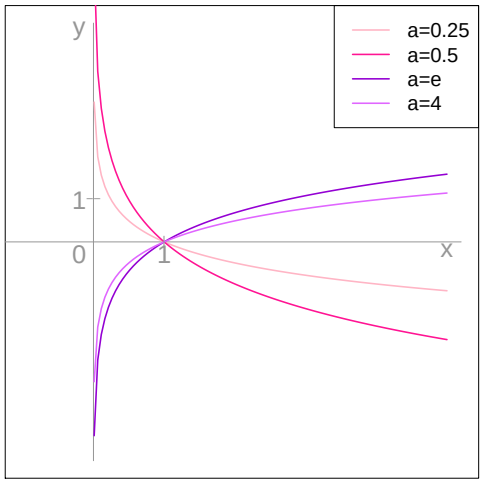
- **LOGARITMICKÁ FUNKCE**

$\boxed{f(x) = \log_a x}$, $a \in (0,1)$ ... klesající funkce

$\boxed{f(x) = \log_a x}$, $a > 1$ ... rostoucí funkce, typicky $f(x) = \ln x$

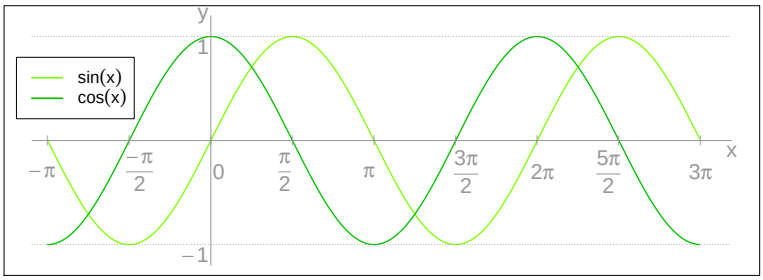
$D(f) = \mathbb{R}^+$

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



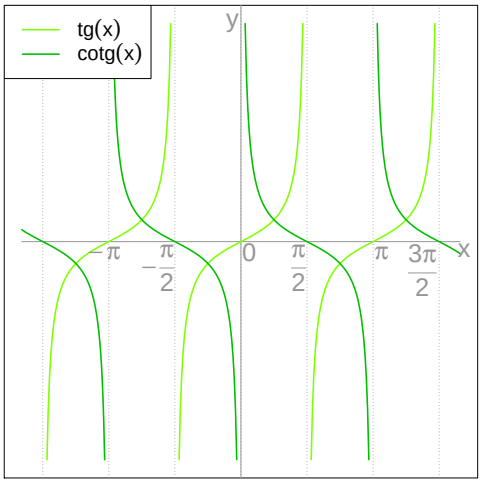
- **GONIOMETRICKÉ FUNKCE I**

$\boxed{f(x) = \sin(x)}$
$D(f) = \mathbb{R}$
$H(f) = [-1, 1]$
$\boxed{f(x) = \cos(x)}$
$D(f) = \mathbb{R}$
$H(f) = [-1, 1]$



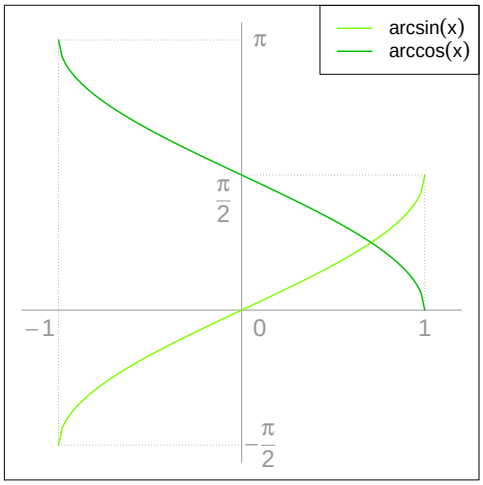
- **GONIOMETRICKÉ FUNKCE II**

$\boxed{f(x) = \mathrm{tg}(x)}$
$D(f) = \mathbb{R} - \{(2k+1)\frac{\pi}{2}, k \in \mathbb{Z}\}$
$H(f) = \mathbb{R}$
$\boxed{f(x) = \mathrm{cotg}(x)}$
$D(f) = \mathbb{R} - \{k\pi, k \in \mathbb{Z}\}$
$H(f) = [-1, 1]$



- **CYKLOMETRICKÉ FUNKCE I**

$\boxed{f(x) = \arcsin(x)}$
$D(f) = [-1, 1]$
$H(f) = [-\frac{\pi}{2}, \frac{\pi}{2}]$
$\boxed{f(x) = \arccos(x)}$
$D(f) = [-1, 1]$
$H(f) = [0, \pi]$



- **CYKLOMETRICKÉ FUNKCE II**

$\boxed{f(x) = \mathrm{arctg}(x)}$
$D(f) = \mathbb{R}$
$H(f) = (-\frac{\pi}{2}, \frac{\pi}{2})$
$\boxed{f(x) = \mathrm{arccotg}(x)}$
$D(f) = \mathbb{R}$
$H(f) = (0, \pi)$