Základní rozvoje funkcí do Taylorových řad

$$e^x = \sum_0^\infty \frac{x^k}{k!} = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} \dots ;\ x \in (-\infty; \infty)$$

$$\sin(x) = \sum_0^\infty (-1)^k \frac{x^{2k+1}}{(2k+1)!} = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} \dots ;\ x \in (-\infty; \infty)$$

$$\cos(x) = \sum_0^\infty (-1)^k \frac{x^{2k}}{(2k)!} = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} \dots ;\ x \in (-\infty; \infty)$$

$$\ln(1+\mathrm{x}) = \sum_0^\infty (-1)^k \frac{x^{k+1}}{k+1} = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} \dots ;\ x \in (-1; 1\rangle$$

$$\frac{1}{1-x} = \sum_0^\infty x^k = 1 + x + x^2 + x^3 + x^4 \dots ;\ x \in (-1; 1)$$

$$arctg\ (x) = \sum_0^\infty (-1)^k \frac{x^{2k+1}}{2k+1} = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} \dots ;\ x \in \langle -1; 1\rangle$$

$$\sinh(x) = \frac{e^x - e^{-x}}{2} = \sum_0^\infty \frac{x^{2k+1}}{(2k+1)!} = x + \frac{x^3}{3!} + \frac{x^5}{5!} + \frac{x^7}{7!} \dots ;\ x \in (-\infty; \infty)$$

$$\cosh(x) = \frac{e^x + e^{-x}}{2} = \sum_0^\infty \frac{x^{2k}}{(2k)!} = 1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \frac{x^6}{6!} \dots ;\ x \in (-\infty; \infty)$$

$$(1+x)^r = \sum_0^\infty x^k \binom{r}{k} = 1 + x\binom{r}{1} + x^2\binom{r}{2} + x^3\binom{r}{3} \dots ;\ x \in (-1; 1)$$

Všechny funkce jsou aproximovány v okolí bodu x=0.