Taylorův rozvoj

$$\mathrm{e}^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots = \sum_{i=0}^{\infty} \frac{x^i}{i!} \quad \text{pro } x \in (-\infty, \infty)$$

$$\mathrm{e}^x \approx 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \cdots + \frac{x^n}{(n)!}.$$

$$\frac{1}{1-x} = 1 + x + x^2 + x^3 + \cdots = \sum_{n=0}^{\infty} x^n \quad \text{pro } x \in (-1, 1)$$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!} \quad \text{pro } x \in (-\infty, \infty)$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!} \quad \text{pro } x \in (-\infty, \infty)$$

$$(1+x)^r = 1 + \binom{r}{1}x + \binom{r}{2}x^2 + \binom{r}{3}x^3 + \cdots = \sum_{n=0}^{\infty} \binom{r}{n} x^n \quad \text{pro } r \in \mathbb{R}, x \in (-1, 1)$$

$$\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \frac{x^5}{5} - \cdots = \sum_{n=1}^{\infty} (-1)^{n+1} \frac{x^n}{n} \quad \text{pro } x \in (-1, 1\rangle$$

$$a^x = 1 + \frac{x \ln a}{1!} + \frac{x^2 \ln^2 a}{2!} + \frac{x^3 \ln^3 a}{3!} + \cdots = \sum_{n=0}^{\infty} \frac{(x \ln a)^n}{n!} \quad \text{pro } a > 0, x \in (-\infty, \infty)$$

$$\ln \frac{1+x}{1-x} = 2\left[x + \frac{x^3}{3} + \frac{x^5}{5} + \frac{x^7}{7} + \cdots\right] = 2\sum_{n=0}^{\infty} \frac{x^{2n+1}}{2n+1} \quad x \in (-1, 1)$$

$$\mathrm{tg}\, x = x + \frac{1}{3}x^3 + \frac{2}{15}x^5 + \frac{17}{315}x^7 + \cdots \quad \text{pro } x \in \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$

$$\arcsin x = x + \frac{1}{2}\frac{x^3}{3} + \frac{1}{2}\frac{3}{4}\frac{x^5}{5} + \frac{1}{2}\frac{3}{4}\frac{5}{6}\frac{x^7}{7} + \cdots \quad \text{pro } x \in (-1, 1)$$

$$\arccos x = \frac{\pi}{2} - x - \frac{1}{2}\frac{x^3}{3} - \frac{1}{2}\frac{3}{4}\frac{x^5}{5} - \frac{1}{2}\frac{3}{4}\frac{5}{6}\frac{x^7}{7} + \cdots \quad \text{pro } x \in (-1, 1)$$

$$\mathrm{arctg}\, x = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + \cdots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{2n+1} \quad \text{pro } x \in\, <-1, 1>$$

$$\sinh x = x + \frac{x^3}{3!} + \frac{x^5}{5!} + \cdots = \sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!} \quad \text{pro } x \in (-\infty, \infty)$$

$$\cosh x = 1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \cdots = \sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!} \quad \text{pro } x \in (-\infty, \infty)$$