

## Maclaurinovy rozvoje elementárních analytických funkcí:

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} \quad \& \quad O = (-\infty, +\infty)$$

$$\ln(1+x) = \sum_{n=1}^{\infty} (-1)^{n+1} \frac{x^n}{n} \quad \& \quad O = (-1, 1)$$

$$\sin(x) = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!} \quad \& \quad O = (-\infty, +\infty)$$

$$\cos(x) = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!} \quad \& \quad O = (-\infty, +\infty)$$

$$\operatorname{arctg}(x) = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{2n+1} \quad \& \quad O = (-1, 1)$$

$$\arcsin(x) = x + \sum_{n=1}^{\infty} \frac{(2n-1)!!}{(2n)!!} \frac{x^{2n+1}}{2n+1} \quad \& \quad O = (-1, 1)$$

$$\arccos(x) = \frac{\pi}{2} - x - \sum_{n=1}^{\infty} \frac{(2n-1)!!}{(2n)!!} \frac{x^{2n+1}}{2n+1} \quad \& \quad O = (-1, 1)$$

$$\sinh(x) = \sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!} \quad \& \quad O = (-\infty, +\infty)$$

$$\cosh(x) = \sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!} \quad \& \quad O = (-\infty, +\infty)$$

$$(1+x)^\beta = \sum_{n=0}^{\infty} \binom{\beta}{n} x^n \quad \& \quad O = \begin{cases} (-\infty, +\infty) & \text{pro } \beta \in \mathbf{N}_0 \\ (-1, 1) & \text{pro } \beta \in (0, +\infty) \setminus \mathbf{N} \\ (-1, 1) & \text{pro } \beta \in (-1, 0) \\ (-1, 1) & \text{pro } \beta \leq -1 \end{cases}$$