SVILUPPI DI MACLAURIN NOTEVOLI

$$e^x = \sum_{k=0}^{+\infty} \frac{x^k}{k!} = 1 + x + \frac{x^2}{2} + \ldots \quad (-\infty; +\infty)$$

$$\ln(1+x) = \sum_{k=0}^{+\infty} (-1)^k \cdot \frac{x^{k+1}}{(k+1)} = x - \frac{x^2}{2} + \frac{x^3}{3} + \ldots \quad (-1; +1]$$

$$\sin(x) = \sum_{k=0}^{+\infty} (-1)^k \cdot \frac{x^{2k+1}}{(2k+1)!} = x - \frac{x^3}{6} + \frac{x^5}{5!} + \ldots \quad (-\infty; +\infty)$$

$$\cos(x) = \sum_{k=0}^{+\infty} (-1)^k \cdot \frac{x^{2k}}{(2k)!} = 1 - \frac{x^2}{2} + \frac{x^4}{4!} + \ldots \quad (-\infty; +\infty)$$

$$\sinh(x) = \sum_{k=0}^{+\infty} \frac{x^{2k+1}}{(2k+1)!} = x + \frac{x^3}{6} + \frac{x^5}{5!} + \ldots \quad (-\infty; +\infty)$$

$$\cosh(x) = \sum_{k=0}^{+\infty} \frac{x^{2k}}{(2k)!} = 1 + \frac{x^2}{2} + \frac{x^4}{4!} + \ldots \quad (-\infty; +\infty)$$

$$\arctan(x) = \sum_{k=0}^{+\infty} (-1)^k \cdot \frac{x^{2k+1}}{2k+1} = x - \frac{x^3}{3} + \frac{x^5}{5} + \ldots \quad [-1; 1]$$

$$(1+x)^\alpha = \sum_{k=0}^{+\infty} \binom{\alpha}{k} \cdot x^k \quad [-1; 1]$$

$$\binom{\alpha}{k} = \frac{\alpha\,(\alpha-1)\,(\alpha-2)\ldots(\alpha-k+1)}{k!}$$