Sviluppi di Mac Laurin (più usati)

$$e^x = 1 + x + \frac{x^2}{2} + \cdots + \frac{x^n}{n!} + o(x^n)$$

$$\sin x = x - \frac{x^3}{6} + \frac{x^5}{5!} + \cdots + (-1)^n \frac{x^{2n+1}}{(2n+1)!} + o(x^{2n+2})$$

$$\cos x = 1 - \frac{x^2}{2} + \frac{x^4}{4!} + \cdots + (-1)^n \frac{x^{2n}}{(2n)!} + o(x^{2n+1})$$

$$\sinh x = x + \frac{x^3}{6} + \frac{x^5}{5!} + \cdots + \frac{x^{2n+1}}{(2n+1)!} + o(x^{2n+2})$$

$$\cosh x = 1 + \frac{x^2}{2} + \frac{x^4}{4!} + \cdots + \frac{x^{2n}}{(2n)!} + o(x^{2n+1})$$

$$\log(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} + \cdots + (-1)^{n+1} \frac{x^n}{n} + o(x^n)$$

$$(1+x)^a = 1 + ax + \frac{a(a-1)}{2}x^2 + \frac{a(a-1)(a-2)}{3!}x^3 + \cdots + \left(\begin{array}{c} a \\ n \end{array} \right) x^n + o(x^n),$$

dove per ogni $a \in \mathbb{R}$ e $n \neq 0$, $\left(\begin{array}{c} a \\ n \end{array} \right) = \frac{a(a-1)(a-2)\ldots(a-n+1)}{n!}$.

$$\arctan x = x - \frac{x^3}{3} + \frac{x^5}{5} + \cdots + (-1)^n \frac{x^{2n+1}}{2n+1} + o(x^{2n+2})$$

$$\tan x = x + \frac{x^3}{3} + \frac{2}{15}x^5 + o(x^6)$$

$$\arcsin x = x + \frac{x^3}{6} + \frac{3}{40}x^5 + o(x^6)$$

$$\tanh x = x - \frac{x^3}{3} + \frac{2}{15}x^5 + o(x^6)$$