Principali sviluppi di Taylor-MacLaurin in $x_0 = 0$

Polinomio di Taylor: $$T_n[f](x) = \sum_{j=0}^{n} \frac{f^{(j)}(x_0)}{j!}(x - x_0)^j$$

Formula di Taylor: $$f(x) - T_n[f](x) = (\sigma(x - x_0)^n)_{x \to x_0}$$

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + ... + \frac{x^n}{n!} + \sigma(x^n)$$

$$sen(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + ... + (-1)^n \frac{x^{2n+1}}{(2n+1)!} + \sigma(x^{2n+2})$$

$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + ... + (-1)^n \frac{x^{2n}}{(2n)!} + \sigma(x^{2n+1})$$

$$tg(x) = x + \frac{x^3}{3} + \frac{2x^5}{15} + \frac{17x^7}{315} + \sigma(x^8)$$

$$\ln(1 + x) = x - \frac{x^2}{2} + \frac{x^3}{3} + ... + (-1)^{n-1} \frac{x^n}{n} + \sigma(x^n)$$

$$arcsen(x) = x + \frac{x^3}{6} + \frac{3x^5}{40} + \frac{15x^7}{336} + \sigma(x^8)$$

$$\arccos(x) = \frac{\pi}{2} - x - \frac{x^3}{6} - \frac{3x^5}{40} - \frac{15x^7}{336} + \sigma(x^8)$$

$$arctg(x) = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + ... + (-1)^n \frac{x^{2n+1}}{2n+1} + \sigma(x^{2n+2})$$

$$Senh(x) = x + \frac{x^3}{3!} + \frac{x^5}{5!} + ... + \frac{x^{2n+1}}{(2n+1)!} + \sigma(x^{2n+2}) \qquad \left(Senh(x) = \frac{e^x - e^{-x}}{2} \right)$$

$$Cosh(x) = 1 + \frac{x^2}{2!} + \frac{x^4}{4!} + ... + \frac{x^{2n}}{(2n)!} + \sigma(x^{2n+1}) \qquad \left(Cosh(x) = \frac{e^x + e^{-x}}{2} \right)$$

$$Tanh(x) = x - \frac{x^3}{3} + \frac{2}{5}x^5 + \sigma(x^6) \qquad \left(Tanh(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}} \right)$$

$$(1 + x)^\alpha = 1 + \alpha x + \frac{\alpha(\alpha - 1) \cdot x^2}{2!} + \frac{\alpha(\alpha - 1)(\alpha - 2) \cdot x^3}{2!} + ... + \binom{\alpha}{n} x^n + \sigma(x^n) \qquad (\alpha \in R)$$

$$\frac{1}{1 - x} = 1 + x + x^2 + ... + x^n + \sigma(x^n)$$