Sviluppi di Taylor Mac Laurin

$$\frac{1}{1-x} = 1 + x + x^2 + x^3 + x^4 + o\left(x^4\right)$$

$$\frac{1}{1+x} = 1 - x + x^2 - x^3 + x^4 + o\left(x^4\right)$$

$$\frac{1}{1-2x} = 1 + 2x + 4x^2 + 8x^3 + 16x^4 + o\left(x^4\right)$$

$$\log\left(1-x\right) = -x - \frac{x^2}{2} - \frac{x^3}{3} - \frac{x^4}{4} + o\left(x^4\right)$$

$$\frac{1}{1+x^2} = 1 - x^2 + x^4 - x^6 + x^8 + o\left(x^8\right)$$

$$\arctan x = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + \frac{x^9}{9} + o\left(x^9\right)$$

$$\frac{1}{\left(1-x\right)^2} = 1 + 2x + 3x^2 + 4x^3 + 5x^4 + o\left(x^4\right)$$

$$e^x = 1 + x + \frac{x^2}{2} + \frac{x^3}{6} + \frac{x^4}{24} + o\left(x^4\right)$$

$$e^{-x} = 1 - x + \frac{x^2}{2} - \frac{x^3}{6} + \frac{x^4}{24} + o\left(x^4\right)$$

$$\sin x = x - \frac{x^3}{6} + \frac{x^5}{120} - \frac{x^7}{5040} + \frac{x^9}{9!} + o\left(x^9\right)$$

$$\cos x = 1 - \frac{x^2}{2} + \frac{x^4}{24} - \frac{x^6}{720} + \frac{x^8}{8!} + o\left(x^8\right)$$

$$\sinh x = x + \frac{x^3}{6} + \frac{x^5}{120} + \frac{x^7}{5040} + \frac{x^9}{9!} + o\left(x^9\right)$$

$$\cosh x = 1 + \frac{x^2}{2} + \frac{x^4}{24} + \frac{x^6}{720} + \frac{x^8}{8!} + o\left(x^8\right)$$

$$e^{-x^2} = 1 - x^2 + \frac{x^4}{2} - \frac{x^6}{6} + \frac{x^8}{24} + o\left(x^8\right)$$

$$\log\left(\frac{1+x}{1-x}\right) = 2x + \frac{2x^3}{3} + \frac{2x^5}{5} + \frac{2x^7}{7} + \frac{2x^9}{9} + o\left(x^9\right)$$

$$\tan x = x + \frac{x^3}{3} - \frac{x^5}{15} + o\left(x^5\right)$$

$$\int_0^x e^{-t^2} dt = x - \frac{x^3}{3} + \frac{x^5}{5 \cdot 2!} - \frac{x^7}{7 \cdot 3!} + \frac{x^9}{9 \cdot 4!} + o\left(x^9\right)$$

$$(1+x)^p = 1 + px \frac{p(p-1)}{2} x^2 + \frac{p(p-1)(p-2)}{6} x^3 + o\left(x^3\right)$$

$$\log(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + o\left(x^4\right)$$

$$e^{x^2} = 1 + x^2 + \frac{x^4}{2} + \frac{x^6}{6} + \frac{x^8}{24} + o\left(x^8\right)$$

$$\arcsin x = 0 + \frac{x^3}{6} + \frac{3x^5}{40} + \frac{15x^7}{336} + o\left(x^7\right)$$

Prodotti notevoli

$$\left(a^2 - b^2\right) = (a-b)(a+b)$$

$$\left(a^3 - b^3\right) = (a-b)\left(a^2 + ab + b^2\right)$$

$$\left(a^4 - b^4\right) = (a-b)\left(a^3 + a^2 b + ab^2 + b^3\right)$$

$$\left(a^5 - b^5\right) = (a-b)\left(a^4 + a^3 b + a^2 b^2 + ab^3 + b^4\right)$$

$$\left(a^n - b^n\right) = (a-b) \sum_{k=0}^{n-1} a^{n-1-k} b^k$$

$$\left(a^3 + b^3\right) = (a+b)\left(a^2 - ab + b^2\right)$$

$$\left(a^5 - b^5\right) = (a+b)\left(a^4 - a^3 b + a^2 b^2 - ab^3 + b^4\right)$$

$$\left(a^{2n+1} - b^{2n+1}\right) = (a+b) \sum_{k=0}^{2n} (-1)^k a^{2n-k} b^k$$