

Seno e coseno

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots + (-1)^{n-1} \frac{x^{2n-1}}{(2n-1)!} + \dots$$

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

Esponenziale

$$e^x = \exp x = 1 + x + \frac{x^2}{2} + \frac{x^3}{3} + \dots + \frac{x^n}{n!} + \dots$$

$$e^{-x} = \exp(-x) = 1 - x + \frac{x^2}{2} - \frac{x^3}{3!} + \dots + (-1)^n \frac{x^n}{n!} + \dots$$

Seno iperbolico e coseno iperbolico

$$\sinh x = x + \frac{x^3}{3!} + \frac{x^5}{5!} + \frac{x^7}{7!} + \dots + \frac{x^{2n-1}}{(2n-1)!} + \dots$$

$$\cosh x = 1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \frac{x^6}{6!} + \dots + \frac{x^{2n-2}}{(2n-2)!} + \dots$$

Serie geometrica

$$\sum_{i=0}^{+\infty} x^i = 1 + x + x^2 + x^3 + \dots + x^n + \dots = \frac{1}{1-x} \quad \forall x \in]-1, +1[$$

$$\sum_{i=0}^n x^i = 1 + x + x^2 + x^3 + \dots + x^n = \frac{1-x^{n+1}}{1-x} \quad \forall x \in \mathbb{R}$$

Logaritmo

$$\ln(1+x) = \log_e(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots + (-1)^{n-1} \frac{x^n}{n} \quad \forall x \in]-1, +1[$$

Funzioni trigonometriche inverse

$$\arctan x = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + \dots + (-1)^{n-1} \frac{x^{2n-1}}{2n-1} + \dots \quad \forall x \in [-1, +1]$$

$$\operatorname{sech} x = x + \frac{x^3}{3} + \frac{x^5}{5} + \frac{x^7}{7} + \dots + \frac{x^{2n-1}}{2n-1} + \dots \quad \forall x \in]-1, +1[$$

$$\arcsin x = x + \sum_{n=1}^{+\infty} \left(\frac{(2n-1)!!}{(2n)!!} \frac{x^{2n+1}}{2n+1} \right) + \dots \quad \forall x \in [-1, +1]$$

$$\arccos x = \frac{\pi}{2} - \arcsin x = \frac{\pi}{2} - x - \sum_{n=1}^{+\infty} \left(\frac{(2n-1)!!}{(2n)!!} \frac{x^{2n+1}}{2n+1} \right) + \dots \quad \forall x \in [-1, +1]$$