$\lim_{x \to +\infty} x^\alpha = +\infty$	$\alpha > 0$	$\lim_{x \to +\infty} x^\alpha = 0$	$\alpha < 0$
$\lim_{x \to +\infty} a^x = +\infty$		$\lim_{x \to -\infty} x^a = 0$	$a > 1$
$\lim_{x \to +\infty} a^x = 0$		$\lim_{x \to -\infty} a^x = +\infty$	$a < 1$
$\lim_{x \to +\infty} \log_a(x) = +\infty$		$\lim_{x \to 0+} \log_a(x) = -\infty$	$a > 1$
$\lim_{x \to +\infty} \log_a(x) = -\infty$		$\lim_{x \to 0+} \log_a(x) = +\infty$	$a < 1$

Tavola I Limiti di funzioni elementari

$\lim_{x \to 0} \frac{\sin(x)}{x} = 1$		$\lim_{x \to 0} \frac{1 - \cos(x)}{x^2} = \frac{1}{2}$	
$\lim_{x \to 0} \left(1 + \frac{a}{x}\right)^x = e^a$	$a \in \mathbf{R}$		
$\lim_{x \to 0} (1 + x)^{\frac{1}{x}} = e$	$a \in \mathbf{R}$		
$\lim_{x \to 0} \frac{a^x - 1}{x} = \log(\mathrm{a})$	$a > 0$		
$\lim_{x \to 0} \frac{\log_a(1 + x)}{x} = \log_a(\mathrm{e})$	$a > 0$		
$\lim_{x \to 0} \frac{(1 + x)^\alpha - 1}{x} = \alpha$	$\alpha \in \mathbf{R}$		

Tavola II Limiti notevoli.

Tavola I. Formule di Mac Laurin con resto di Peano

$$
\begin{aligned}
e^x &= 1 + x + \frac{x^2}{2} + \dots \quad \dots + \frac{x^n}{n!} + o(x^n) \\
\sin(x) &= x - \frac{x^3}{3!} + \frac{x^5}{5!} \dots \quad \dots + (-1)^n \frac{x^{2n+1}}{(2n+1)!} + o(x^{2n+2}) \\
\cos(x) &= 1 - \frac{x^2}{2!} + \frac{x^4}{4!} \dots \quad \dots + (-1)^n \frac{x^{2n}}{(2n)!} + o(x^{2n+1}) \\
\arcsin(x) &= x - \frac{x^3}{3} + \frac{x^5}{5} \dots \quad \dots + (-1)^n \frac{x^{2n+1}}{(2n+1)} + o(x^{2n+2}) \\
\mathrm{arctg}(x) &= x - \frac{x^3}{3} + \frac{x^5}{5} \dots \quad \dots + (-1)^n \frac{x^{2n+1}}{(2n+1)} + o(x^{2n+2}) \\
\log(1+x) &= x - \frac{x^2}{2} + \frac{x^3}{3} \dots \quad \dots + (-1)^{n-1} \frac{x^n}{n} + o(x^n) \\
\mathrm{tg}(x) &= x + \frac{x^3}{3} + \frac{2x^5}{5} + \frac{17x^7}{315} + o(x^8) \\
(1+x)^\alpha &= 1 + \alpha x + \binom{\alpha}{2} x^2 \dots \ \dots + \binom{\alpha}{n} x^n + o(x^n)
\end{aligned}
$$

In particolare

$$
\begin{aligned}
\frac{1}{1-x} &= 1 + x + x^2 \dots\dots\dots\dots + x^n + o(x^n) \\
\frac{1}{1+x} &= 1 - x + x^2 \dots \ \dots + (-1)^n x^n + o(x^n).
\end{aligned}
$$

Tavola I. Formule di Mac Laurin con resto di Lagrange

$$e^x = 1 + x + \frac{x^2}{2} + \dots \quad \dots + \frac{x^n}{n!} + \frac{x^{n+1}}{(n+1)!}\ e^c$$

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

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

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

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

$$\log(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} \dots \quad \dots + (-1)^{n-1} \frac{x^n}{n} + (-1)^n \frac{x^{n+1}}{n+1}\ \frac{1}{(1+c)^{n+1}}$$

$$(1+x)^\alpha = 1 + \alpha x + \binom{\alpha}{2} x^2 \dots \quad \dots + \binom{\alpha}{n} x^n + \binom{\alpha}{n+1} (1+c)^{\alpha-n-1} x^{n+1}$$

dove $$\binom{\alpha}{k} = \frac{\alpha(\alpha-1)(\alpha-2)\dots(\alpha-k+1)}{k!} \qquad \alpha \in \mathbf{R}$$

$$
\begin{aligned}
e^x &= 1 + x + \frac{x^2}{2} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} \frac{x^n}{n!} \\
\sin(x) &= x - \frac{x^3}{3!} + \frac{x^5}{5!} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!} = \\
\cos(x) &= 1 - \frac{x^2}{2!} + \frac{x^4}{4!} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!} \\
\text{arcsin(x)} &= x - \frac{x^3}{3} + \frac{x^5}{5} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)} \\
\text{arctg(x)} &= x - \frac{x^3}{3} + \frac{x^5}{5} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)} \\
\log(1+x) &= x - \frac{x^2}{2} + \frac{x^3}{3} + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^{n-1} \frac{x^n}{n} \\
\text{tg}(x) &= x + \frac{x^3}{3} + \frac{2x^5}{5} + \frac{17x^7}{315} + \ldots\ldots\ldots \\
(1+x)^\alpha &= 1 + \alpha x + \binom{\alpha}{2} x^2 + \ldots\ldots\ldots = \sum_{n=0}^{\infty} \binom{\alpha}{n} x^n \\
\frac{1}{1-x} &= 1 + x + x^2 + \ldots\ldots\ldots = \sum_{n=0}^{\infty} x^n \\
\frac{1}{1+x} &= 1 - x + x^2 + \ldots\ldots\ldots = \sum_{n=0}^{\infty} (-1)^n x^n. \\
\sqrt{1-x} &= 1 + \frac{1}{2}x - \frac{1}{8}x^2 + \frac{1}{16}x^3 + \ldots\ldots\ldots
\end{aligned}
$$

Tavola III Serie di Taylor di punto iniziale 0 di alcune funzioni elementari

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

$$
k \in \mathbf{N}, \alpha \in \mathbf{R}.
$$