

LIMITI NOTEVOLI

$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$	$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} = \frac{1}{2}$	$\lim_{x \rightarrow +\infty} x \cdot \sin \frac{1}{x} = 1$	$\lim_{x \rightarrow 0} \frac{\arcsin x}{x} = 1$
$\lim_{x \rightarrow +\infty} \frac{\sin x}{x} = 0$	$\lim_{x \rightarrow 0} \sqrt{\frac{\sin x}{x}} = 1$	$\lim_{x \rightarrow 0} \frac{\sin x + x^2}{x} = 1$	$\lim_{x \rightarrow +\infty} \left(1 + \frac{1}{x}\right)^x = e$
$\lim_{x \rightarrow +\infty} \left(1 + \frac{1}{x}\right)^x = e$	$\lim_{x \rightarrow +\infty} \left(1 - \frac{1}{x}\right)^x = \frac{1}{e}$	$\lim_{x \rightarrow 0} \log_a (1+x)^{\frac{1}{x}} = \log_a e$	
$\lim_{x \rightarrow 0} \frac{\log_a (1+x)}{x} = 1$	$\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log_a a$	$\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$	$\lim_{x \rightarrow 0} \frac{(1+x)^a - 1}{x} = a$
$\lim_{x \rightarrow 0} \frac{\arctan x}{x} = 1$	$\lim_{x \rightarrow +\infty} \left(1 + \frac{1}{x}\right)^x = e$	$\lim_{x \rightarrow +\infty} \frac{\log_e x}{x} = 0$	$\lim_{x \rightarrow 0^+} \frac{\log_e x}{x} = -\infty$
$\lim_{x \rightarrow +\infty} \sqrt{x} = +\infty$	$\lim_{x \rightarrow 0} \left(\frac{\sin x}{x}\right)^{\frac{1}{x}} = 1$	$\lim_{x \rightarrow +\infty} x(\sqrt{x} - 1) = +\infty$	$\lim_{x \rightarrow +\infty} \sqrt{x!} = +\infty$
$\lim_{x \rightarrow +\infty} \frac{x}{\sqrt{x!}} = e$	$m!$ ha ordine di ∞ sopra e^m e inf a m^m	FORMULA DI STERLING $\lim_m m! = \lim_m m^m \cdot e^{-m} \sqrt{2\pi m}$	
$\lim_{m \rightarrow \infty} m^{\frac{1}{m}} = 1 = \lim_{m \rightarrow \infty} (m+1)^{\frac{1}{m}}$			
$\sum_{k=0}^{\infty} z^k = \frac{1}{1-z}, z < 1$ $\sum_{k=1}^{\infty} z^k = \frac{z}{1-z}, z < 1$ $\sum_{k=0}^{\infty} (-1)^k z^k = \frac{1}{1+z}, z < 1$ $\sum_{k=1}^{\infty} (-1)^k z^k = \frac{-z}{1+z}, z < 1$			
$\sin t - t = \mathcal{O}(t^3) (t \rightarrow 0^+)$			
$\frac{d}{dx} [x] = \frac{ x }{x}$	$\frac{d}{dx} [(f(x))^{g(x)}] = e^{g(x) \log(f(x))} \cdot [g'(x) \log(f(x)) + g(x) \cdot \frac{f'(x)}{f(x)}]$		
$\frac{d}{dx} [x^x] = x^x (1 + \log_e x)$	$\frac{d}{dx} [\log_e x \cdot 2x] = -\frac{\log_e 2}{x(\log_e x)^2}$		
$\frac{d}{dx} [x-a] = \frac{x-a}{ x-a }$	$\frac{d}{dx} [\log_a x] = \frac{1}{x} \log_a e$	$\frac{d}{dx} [a^x] = a^x \log_a a$	