LIMITI NOTEVOLI DI SUCCESSIONI

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$$\lim_{n} \left(1+\frac{1}{n}\right)^{n} = e$$

$$\lim_{n} a^{n} = \begin{cases} +\infty & \text{se } a>1 \\ 1 & \text{se } a=1 \\ 0 & \text{se } -1<a<1 \\ \text{non esiste} & \text{se } a\leq -1 \end{cases}$$

$$\lim_{n} a^{\frac{1}{n}} = 1 \qquad \forall a>0$$

$$\lim_{n} \sqrt[n]{n} = 1$$

$$\lim_{n} \log_a(n) = \begin{cases} -\infty & \text{se } 0<a<1 \\ +\infty & \text{se } a>1 \end{cases}$$

$$\lim_{n} \frac{n^{\alpha}}{e^{n}} = 0^{+} \qquad \forall \alpha \in \mathbb{R}$$

$$\lim_{n} \frac{\log(n)}{n^{\alpha}} = \begin{cases} 0 & \text{se } a>0 \\ +\infty & \text{se } a\leq 0 \end{cases}$$

$$\lim_{n} \frac{n^{\alpha}}{n!} = 0 \qquad \forall \alpha \in \mathbb{R}$$

$$\lim_{n} \frac{n^{\alpha}}{n^{n}} = 0 \qquad \forall \alpha \in \mathbb{R}$$

$$\lim_{n} \frac{\log(n)}{e^{n}} = 0$$

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$$\lim_{n} \frac{e^n}{n!} = 0$$

$$\lim_{n} \frac{e^n}{n^n} = 0$$

$$\lim_{n} \frac{n!}{n^n} = 0$$

GERARCHIA DEGLI INFINITI

$$\log_a n, \quad n^\alpha, \quad a^n, \quad n!, \quad n^n$$

con

$$\lim_{n} \frac{\log_a n}{n^\alpha} = \lim_{n} \frac{n^\alpha}{a^n} = \lim_{n} \frac{a^n}{n!} = \lim_{n} = \frac{n!}{n^n} = 0$$