

LIMITI NOTEVOLI

$$\lim_{x \rightarrow 0} \frac{\text{sen } x}{x} = 1$$

dim. geometrica p.1426

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x} = 0$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x} \cdot \frac{1 + \cos x}{1 + \cos x} = \dots$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} = \frac{1}{2}$$

$$\lim_{x \rightarrow \pm\infty} \left(1 + \frac{1}{x}\right)^x = e$$

definizione,

in generale si ha:

$$\lim_{x \rightarrow \pm\infty} \left(1 + \frac{a}{x}\right)^{b \cdot x} = e^{a \cdot b}$$

$$\lim_{x \rightarrow 0} \frac{\ln(1+x)}{x} = 1$$

$$\text{sost.: } t = \frac{1}{x}$$

$$\lim_{x \rightarrow 0} \frac{\log_a(1+x)}{x} = \log_a e \quad (\text{se } a > 0)$$

$$\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$$

$$\text{sost.: } t = e^x - 1$$

$$\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \ln a \quad (\text{se } a > 0)$$

$$\lim_{x \rightarrow 0} \frac{(1+x)^k - 1}{x} = k$$

$$\lim_{x \rightarrow 0} \frac{e^{k \cdot \ln(1+x)} - 1}{x} \cdot \frac{k \cdot \ln(1+x)}{k \cdot \ln(1+x)} = \dots$$
