

12 - LIMITI NOTevoli

- $\lim_{x \rightarrow 0} \frac{\sin(x)}{x} = 1$
- $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x^2} = \frac{1}{2}$
- $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x} = 0$
- $\lim_{x \rightarrow 0} \frac{\tan(x)}{x} = 1$
- $\lim_{x \rightarrow 0} \frac{\arcsin(x)}{x} = 1$
- $\lim_{x \rightarrow 0} \frac{\arctan(x)}{x} = 1$
- $\lim_{x \rightarrow \pm \infty} \left(1 + \frac{1}{x}\right)^x = e$
- $\lim_{x \rightarrow 0} (1+x)^{\frac{1}{x}} = e$
- $\lim_{x \rightarrow \pm \infty} \left(1 + \frac{a}{x}\right)^x = e^a$

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

$$\bullet \lim_{x \rightarrow 0} \frac{\log_a(1+x)}{x} = \log_a(e)$$

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

$$\bullet \lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log(a), \text{ con } a > 0, a \neq 1$$

$$\bullet \lim_{x \rightarrow 0} \frac{(1+x)^a - 1}{x} = a, \quad a \in \mathbb{R}$$

$$\bullet \lim_{x \rightarrow +\infty} \frac{b^x}{x^a} = +\infty \quad \text{con } b > 1, a \in \mathbb{R}$$

$$\bullet \lim_{x \rightarrow +\infty} \frac{x^b}{\log_a(x)} = +\infty \quad \text{con } b > 0, a > 1$$

$$\bullet \lim_{x \rightarrow 0} x^b \log_a(x) = 0 \quad \text{con } b > 0, a > 0 \text{ e } a \neq 1$$