

Tabella riassuntiva dei limiti notevoli

esponenziali e logaritmici

- 1) $\lim_{x \rightarrow +\infty} \left(1 + \frac{1}{x}\right)^x = e$
- 2) $\lim_{x \rightarrow -\infty} \left(1 + \frac{1}{x}\right)^x = e$
- 3) $\lim_{x \rightarrow +\infty} \left(1 + \frac{a}{x}\right)^x = e^a$
- 4) $\lim_{x \rightarrow +\infty} \left(1 + \frac{a}{x}\right)^{nx} = e^{na}$
- 5) $\lim_{x \rightarrow -\infty} \left(1 - \frac{1}{x}\right)^x = \frac{1}{e}$
- 6) $\lim_{x \rightarrow 0} (1 + ax)^{\frac{1}{x}} = e^a$
- 7) $\lim_{x \rightarrow 0} \lg_a (1+x)^{\frac{1}{x}} = \frac{1}{\lg_e a}$
- 8) $\lim_{x \rightarrow 0} \frac{\lg_a (1+x)}{x} = \lg_a e = \frac{1}{\ln a}$
- 9) $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \ln a$
- 10) $\lim_{x \rightarrow 0} \frac{(1+x)^a - 1}{x} = a$
- 11) $\lim_{x \rightarrow 0} \frac{(1+x)^a - 1}{ax} = 1$
- 12) $\lim_{x \rightarrow 0} x^r \lg_a x = 0 \quad \forall a \in \mathbb{R}^+ - \{1\}, \forall r \in \mathbb{R}^+$
- 13) $\lim_{x \rightarrow 0} \frac{\lg_a x}{x^r} = 0 \quad \forall a \in \mathbb{R}^+ - \{1\}, \forall r \in \mathbb{R}^+$
- 14) $\lim_{x \rightarrow +\infty} x^r a^x = \lim_{x \rightarrow +\infty} a^x \quad \forall a \in \mathbb{R}^+ - \{1\}, \forall r \in \mathbb{R}^+$
- 15) $\lim_{x \rightarrow -\infty} |x|^r a^x = \lim_{x \rightarrow -\infty} a^x \quad \forall a \in \mathbb{R}^+ - \{1\}, \forall r \in \mathbb{R}^+$
- 16) $\lim_{x \rightarrow +\infty} \frac{e^x}{x^r} = \lim_{x \rightarrow +\infty} a^x \quad \forall r \in \mathbb{R}^+$
- 17) $\lim_{x \rightarrow +\infty} \frac{x^r}{e^x} = \lim_{x \rightarrow +\infty} a^x \quad \forall r \in \mathbb{R}^+$
- 18) $\lim_{x \rightarrow -\infty} e^x x^r = 0 \quad \forall r \in \mathbb{R}^+$

goniometrici

- 1) $\lim_{x \rightarrow 0} \frac{\text{sen } x}{x} = 1$
- 2) $\lim_{x \rightarrow 0} \frac{\text{sen } ax}{bx} = \frac{a}{b}$
- 3) $\lim_{x \rightarrow 0} \frac{\text{tg } x}{x} = 1$
- 4) $\lim_{x \rightarrow 0} \frac{\text{tg } ax}{bx} = \frac{a}{b}$
- 5) $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x} = 0$
- 6) $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2} = \frac{1}{2}$
- 7) $\lim_{x \rightarrow 0} \frac{\text{arcsen } x}{x} = 1$
- 8) $\lim_{x \rightarrow 0} \frac{\text{arcsen } ax}{bx} = \frac{a}{b}$
- 9) $\lim_{x \rightarrow 0} \frac{\text{arctg } x}{x} = 1$
- 10) $\lim_{x \rightarrow 0} \frac{\text{arctg } ax}{bx} = \frac{a}{b}$
- 11) $\lim_{x \rightarrow 0} \frac{\text{senh } x}{x} = 1$
- 12) $\lim_{x \rightarrow 0} \frac{\text{settsenh } x}{x} = 1$
- 13) $\lim_{x \rightarrow 0} \frac{\text{tgh } x}{x} = 1$
- 14) $\lim_{x \rightarrow 0} \frac{\text{settgh } x}{x} = 1$
- 15) $\lim_{x \rightarrow 0} \frac{x - \text{sen } x}{x^3} = \frac{1}{6}$
- 16) $\lim_{x \rightarrow 0} \frac{x - \text{arctg } x}{x^3} = \frac{1}{3}$