Formula generale:

$$\forall\varepsilon > 0.\, \exists\delta = \delta(x_0, \varepsilon) > 0. \quad \forall x \in \mathcal{D}(f).\, 0 < |x - x_0| < \delta \;\Rightarrow\; |f(x) - l| < \varepsilon$$

$$\lim$$

$$\begin{aligned} &(\mathrm{I})\ x \to x_0 \\ &(\mathrm{II})\ x \to x_0^+ \\ &(\mathrm{III})\ x \to x_0^- \\ &(\mathrm{IV})\ x \to +\infty \\ &(\mathrm{V})\ x \to -\infty \end{aligned} \qquad \text{con} \qquad f(x) = \begin{cases} (1) & l \in \mathbb{R} \\ (2) & +\infty \\ (3) & -\infty \end{cases}$$

definizione di limite:

$$\forall\varepsilon > 0, \exists\delta > 0 : \forall x \in \mathcal{D}(f) :$$

$$\begin{aligned} &(\mathrm{I})\ 0 <\mid x - x_0 \mid< \delta \\ &(\mathrm{II})\ x_0 < x < x_0 + \delta \\ &(\mathrm{III})\ x_0 - \delta < x < x_0 \\ &(\mathrm{IV})\ x > \delta \\ &(\mathrm{V})\ x < -\delta \end{aligned} \qquad \Longrightarrow \qquad \begin{aligned} &(1)\ \mid f(x) - l \mid< \varepsilon \\ &(2)\ f(x) > \varepsilon \\ &(3)\ f(x) < -\varepsilon \end{aligned}$$