Limiti

30 settembre 2020

Limiti non finiti - definizioni

- $\lim_{x \to x_0} f(x) = +\infty \overset{def}{\iff} \forall M > 0 \ \exists \delta(M), \delta > 0 \mid \forall x : 0 < |x - x_0| < \delta, \ f(x) > M$

- $\lim_{x \to x_0} f(x) = -\infty \overset{def}{\iff} \forall M > 0 \ \exists \delta(M), \delta > 0 \mid \forall x : 0 < |x - x_0| < \delta, \ f(x) < -M$

- $\lim_{x \to +\infty} f(x) = \ell \overset{def}{\iff} \forall \varepsilon > 0 \ \exists K(\varepsilon); K > 0 \mid \forall x > K, \ |f(x) - \ell| < \varepsilon$

- $\lim_{x \to +\infty} f(x) = +\infty \overset{def}{\iff} \forall M > 0 \ \exists K(M); K > 0 \mid \forall x > K, \ f(x) > M$

- $\lim_{x \to -\infty} f(x) = \ell \overset{def}{\iff} \forall \varepsilon > 0 \ \exists K(\varepsilon); K > 0 \mid \forall x < -K, |f(x) - \ell| < \varepsilon$

- $\lim_{x \to -\infty} f(x) = +\infty \overset{def}{\iff} \forall M > 0 \ \exists K(M), K > 0 \mid \forall x < -K, \ f(x) > M$