

Definition 14.a.2. [2DN] Let $A \subseteq \mathbb{R}$ and $f : A \rightarrow \mathbb{R}$ be a function; let $x \in A$; f is called **continuous at x** if

$$\forall \varepsilon > 0, \exists \delta > 0, \forall y \in A, |x - y| < \delta \implies |f(x) - f(y)| < \varepsilon .$$

f is called **continuous** if it is continuous in every point.

The set of all continuous functions $f : A \rightarrow \mathbb{R}$ is denoted with $C(A)$; it is a vector space.