



**Definition**

Let  $f : \mathbf{R} \rightarrow \mathbf{R}$ . Then  $f$  is *uniformly continuous* at  $x \in \mathbf{R}$  if

$$(\forall \varepsilon > 0)(\exists \delta > 0)(\forall x \in \mathbf{R})(|x - y| < \delta \Rightarrow |f(x) - f(y)| < \varepsilon)$$

for all  $y \in \mathbf{R}$ .

