



# Real Uniform Continuity

## 1 Why

TODO

## 2 Definition

TODO

### 2.1 Notation

Let  $R$  denote the set of real numbers. Let  $f : R \rightarrow R$ . Then  $f$  is uniformly continuous at  $x \in R$  if

$$(\forall \epsilon > 0)(\exists \delta > 0)(\forall x \in R)(|x - y| < \delta \implies |f(x) - f(y)| < \epsilon)$$

for all  $y \in R$ .