



Real Continuity

1 Why

We try to precisely characterize the idea that a function is continuous, or uninterrupted.

2 Definition

A function from the set of real numbers to the set of real numbers is **continuous at a point** in its domain if for every positive real number

2.1 Notation

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

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

for all $y \in R$.