

Continuous Function at a point

$$\lim_{x \rightarrow a^-} = \lim_{x \rightarrow a^+}$$

$$\lim_{x \rightarrow a} = f(a)$$

The Definition of Continuity

A function $f(x)$ is continuous at c if

- I. $\lim_{x \rightarrow c} f(x)$ exists
- II. $f(c)$ exists
- III. $\lim_{x \rightarrow c} f(x) = f(c)$

Definition of Continuity:

f is continuous at c iff:

(1) $f(c)$ is defined

(2) $\lim_{x \rightarrow c} f(x)$ exists

(3) $\lim_{x \rightarrow c} f(x) = f(c)$