continuity

Continuity test:

$f(c)$ exists

$\lim_{x \to c} f(x)$ exists

$\lim_{x \to c} f(x) = f(c)$

continuity

A function $f(x)$ is continuous at a point x_0 if the limit exists at x_0 and is equal to $f(x_0)$

Continuity test:

A function is continuous at $f(x)$ if it satisfies the following conditions:

1. $f(x)$ is defined at c, i.e. $f(c)$ exists
2. $f(x)$ approaches the same function value to the left and right of c, i.e. $\lim_{x \to c} f(x)$ exists
3. The function value that $f(x)$ approaches from each side of c is $f(c)$, i.e. $\lim_{x \to c} f(x) = f(c)$

discontinuity