



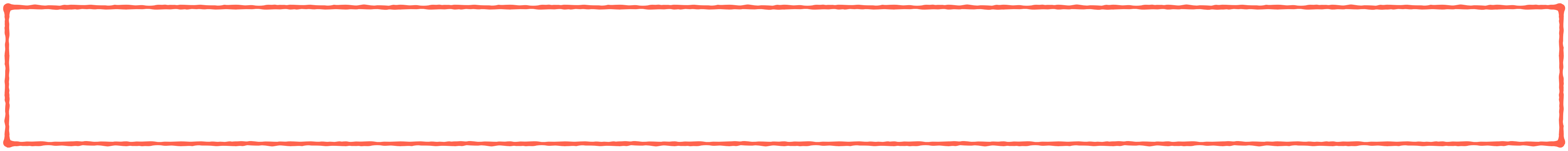
continuity

Continuity test:

$f(c)$  exists

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

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



# 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.  $\lim_{x \rightarrow c} f(x)$  exists
3. The function value that  $f(x)$  approaches from each side of  $c$  is  $f(c)$ , i.e.  $\lim_{x \rightarrow c} f(x) = f(c)$

discontinuity