

Theorem: If f is continuous on $[a, b]$,

then f_{\min} and f_{\max} on $[a, b]$ both exist.

Furthermore, the global extremum is attained at either a , or b , or at a critical point of f .

So, f_{\min} is the smallest of $f(a), f(b), f(c_1), f(c_2), \dots$
 f_{\max} is the largest of these numbers.

c_i are the critical points of f between a and b