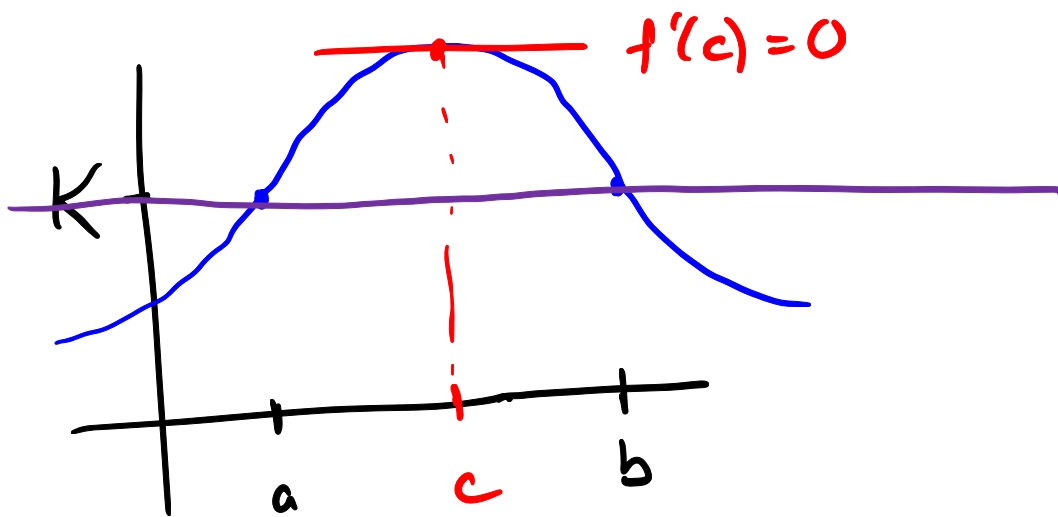


Rolle's Theorem

Let f be a function satisfying:

1. f is continuous on $[a, b]$
2. f is differentiable on (a, b)
3. $f(a) = f(b)$

Then there is a number c in (a, b) such that $f'(c) = 0$



Proof:

Case 1: $f(x) = k$ (constant function) (trivial case)

Then $f'(x) = 0$ for all numbers in (a, b) . So, c can be any number in (a, b) .

Case 2: $f(x) > f(a)$

