The Fundamental Theorem of Calculus

↳ $m_i \leq f(c_i) \leq M_i$

↳ $= (F(t_1) - F(a)) + (F(t_2) - F(t_1)) + \cdots + (F(t_{n-1}) - F(t_{n-2})) + (F(b) - F(t_{n-1})) = F(b) - F(a)$

Corollary: If g is continuous on $[a,b]$, then G is differentiable on $[a,b]$ and G is an antiderivative for g

Apply Thm B to a, x, y

(?)

$0 \le M = \sup |g|$

Apply Thm B to a, x, c

→ $\int_c^x g(c)\,dt$

→ t can only take values in the interval with end points c & x. Then $|t-c| \le |x-c| < \delta$

Then, $|g(t)-g(c)| < \varepsilon/2$