Rolle's Theorem

If f is continuous on $[a,b]$ and differentiable on (a,b) such that $f(a) = f(b)$, then there is at least one number c in the open interval (a,b) such that $f'(c) = 0$.

Rolle's Theorem

f is <u>continuous</u> on the closed interval [a,b], and
f is <u>differentiable</u> on the open interval (a,b).

If $f(a) = f(b)$, then there
exists at least one number
c in (a,b) such that $f'(c) = 0$.

Rolles Thm.: if f(a) = f(b), then f'(c) = 0

Mean Value Thm Part 1: $f'(c) = \dfrac{f(b) - f(a)}{b - a}$

Rolle's Theorem (this is a weak version of the MVT)

If f is continuous on $[a,b]$ and differentiable on (a,b) such that $f(a) = f(b)$, then there is at least one number c in the open interval (a,b) such that $f'(c) = 0$.