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0.1   Rolle's theorem

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Take a real function $f(x)$ on closed interval $[a, b]$, differentiable on $(a, b,)$, and $f(a) = f(b)$.

Rolle's theorem states that:

$\exists c \in (a, b)(f'(c) = 0)$

Generalised Rolle's theorem states that:

Generalised Rolle's theorem implies Rolle's theorem, so we only need to prove the generalised theorem.