MAT4010 Pretest Calculus

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0.1. If f is differentiable on (a, b) and $f'(c) = 0$ for $c \in (a, b)$, does it follow that f has a local extremum at c?

0.2. If f is differentiable on (a, b) and f' changes sign at $c \in (a, b)$, does it follow that f has a local extremum at c?

0.3. If f is differentiable on (a, b) and f has a local extremum at c?, does it follow that f' changes sign at $c \in (a, b)$?

0.4. If f is twice differentiable on (a, b) and $f''(c) = 0$ for $c \in (a, b)$, does it follow that f has a point of inflection at c?

0.5. If f is differentiable on (a, b) and f'' changes sign at $c \in (a, b)$, does it follow that f has a point of inflection at c?

0.6. If f is differentiable on (a, b) and f has a point of inflection at $c \in (a, b)$?, does it follow that f' changes sign at c?