

MA 101 (2014)

Final Examination

Problem 2

(10 marks)

Th.  $f'(x) = 0$   $f''(x) \geq 0$

1.  $\delta$ : a positive number

2.  $\forall h \in (-\delta, \delta)$

$\forall h \in (0, \delta)$

$\forall h \in (-\delta, 0)$

3.  $\lim_{h \rightarrow 0^+} \frac{f(x+h) - f(x)}{h} \geq 0$

4.  $\lim_{h \rightarrow 0^-} \frac{f(x+h) - f(x)}{h} \leq 0$

$\lim_{h \rightarrow 0^+} \dots = \lim_{h \rightarrow 0^-} \dots = 0$

$f'(x) = 0$

5. (2<sup>nd</sup> and) First order derivative test for minimum.

Quick Hand-written solution

by Prof. Lillian BESSON.

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