

## Math 325. Group Quiz #10c

(1) State the *Extreme Value Theorem*.

(2) TRUE OR FALSE, and *justify* with a short proof:

The function

$$f(x) = \begin{cases} x^2 - x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

is differentiable at  $x = 0$ .

- (3) TRUE OR FALSE, and *justify* with a short proof or example:  
There is a continuous function  $f : [1, 3] \rightarrow \mathbb{R}$  with range  $[1, 3] \cup [5, 7]$ .