

Name and surname:

U number:

Calculus I - MAC 2311 - Section 003

Quiz 5

10/24/2018

1) a) [1.5 points] Give the definition of a critical number of a function f .

b) [1.5 points] State the Mean Value Theorem.

2) [4 points] Find the absolute maximum and minimum values of the function

$$f(x) = e^{x^3-3x}$$

on the closed interval $[0, 2]$.

- 3) [4 points] Let f be a differentiable function such that $f'(x) \leq -1$ for all x in \mathbb{R} . If $f(0) = -2$, what is the lowest value that f may attain at -2 ?

- 4) Is the following statement true or false? Justify fully your answer.

Let f be a continuous function. If f has a local minimum at $x = 2$, then $f'(2) = 0$.