Quiz 4

MATH 140B

MSTB 124 NAME (2 POINTS):

Problem 1. (4 points) Prove that a differentiable function is continuous. Is the converse true? Prove or give a counterexample.

Problem 2. (4 points) Suppose f is differentiable on $\mathbb{R}$, $1 \leq f'(x) \leq 2$ for $x \in \mathbb{R}$, and $f(0) = 0$. Prove that $x \leq f(x) \leq 2x$ for all $x \geq 0$.