Mathematics 131
Homework 7
4/10/17

In each of the problems below, $f$ and $g$ are functions from $\mathbb{R}$ to $\mathbb{R}$

## 1, 2, 3

**(1)** Prove that if $f$ is continuous at $a$, then so is $|f|$.

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**(2)** Prove that if $f$ and $g$ are continuous, then so are $\max(f, g)$ and $\min(f, g)$. (Hint: Find a clever way to express $\max(f, g)$ and $\min(f, g)$.)

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**(3)** Suppose $f(x) = x^2$. Is $f$ is uniformly continuous on $\mathbb{R}$?

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