Real Analysis - HW 5

November 2, 2015

This fifth homework for real analysis is due this coming Friday, November 6 by 3:00 PM. It's essentially Exercise 4.4.9 in the text You should type it with LaTeX and turn in your printed PDF.

1. A function $f : A \to \mathbb{R}$ is called *Lipschitz* if there is a positive number M such that

$$\left| \frac{f(x) - f(y)}{x - y} \right| \leq M$$

for all $x, y \in A$.

   (a) Show that if f is Lipschitz on A, then it is uniformly continuous on A.

   (b) Is the converse true? Prove or provide a counter example.