8 September 2015
Analysis I
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HW 3

Due: 15 Sep 2015

The problems are written in the format 'chapter.section.problem-number' from Lang's book. Practice problems must be handed in and will be checked for honest effort. Portfolio problems will be graded thoroughly and may be revised until your solutions are of professional quality. Please submit each portfolio problem on a detached sheet of paper with your name on it.

Practice problems:

1. III.1.2

2. III.1.4

3. III.2.5. As the problem states, $x \sin(1/x)$ is an example of a function that is uniformly continuous but not Lipschitz on $[0, 1]$. Find a non-oscillatory example.

4. Find a function that is convex on $[0, 1]$ but is not continuous on $[0, 1]$.

Portfolio problems:

P7. III.2.6

P8. III.3.6

P9. III.3.7