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Analysis I
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HW 1

Due: 1 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. 0.3.1
2. 0.3.5
3. I.2.5
4. I.4.3
5. I.4.4abc
6. II.1.8

Portfolio problems:

- P1. II.1.9
- P2. II.1.12. Also prove that $\limsup x_n = \lim_{n \rightarrow \infty} \sup_{m \geq n} x_m$.
- P3. State a condition relating $\limsup x_n$ and $\liminf x_n$ that is necessary and sufficient for the sequence $\{x_n\}$ to have a limit. Prove it.