

MA 442, Homework 3, Due February 1, 2017

For the first few weeks I'll assign review problems on material I'd normally expect to have been covered in MA 341 or 440 as well as problems from current material.

You'll need to read the definitions in the relevant sections.

- (1) Basic Concepts of Mathematics: Page 126, #4, 5(i), 7, 8 (for \underline{L} only), 9, 10. (Hint for 7: Prove the first inequality, then use 5(a) and the first inequality after writing $x_n = (x_n + y_n) - y_n$, etc.)
- (2) Mathematical Analysis I: Page 112, #3 (use #1 and 2 without proving them), 5, 6, 12
- (3) Mathematical Analysis I: Page 118, #6, 10(c)(d), 12, 16, 17.
- (4) (Added later.) Mathematical Analysis I: Page 40, #10.
- (5) (Added later.) Prove Theorem 2 in Chapter 2, §13, for $q = +\infty \in E^*$.

When solving a problem something you can use any

- (1) Definitions
- (2) Axioms
- (3) Theorems, Lemmas, and Corollaries, and
- (4) Problems (whether assigned or not)

that are either in the book or done in class that come **before** the problem you're working on.