

## Math 330 Section 1 - Fall 2016 - Homework 17

*Published: Monday, December 2, 2016*  
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*Running total: 62 points*

### Status - Reading Assignments:

Here is the status of the reading assignments you were asked to complete by this date.

B/G (Beck/Geoghegan) Textbook:

ch.1 - ch.13 (skim 7.2)

Appendix A: Continuity & Uniform Continuity

MF lecture notes:

ch.1, ch.2, ch.4-10, ch.11-1 through ch.11.6; (ch.11.6 without proofs)

B/K lecture notes (optional reading – good for examples, improved understanding):

ch.1.1, ch.4.1, ch.4.2

### New reading assignments:

Use the latest version **2016-12-01** of the MF doc to read ch.11!

### Reading assignment 1 - due Monday, December 5:

Read carefully all unread parts of MF ch.11 (should just be the proofs of ch.11.6)

Reread PO sets in MF ch.4.1, especially all examples and remark 4.4

Read carefully MF ch.12.1

### Reading assignment 2 - due: Tuesday, December 6:

Read carefully MF ch.12.2

### Reading assignment 3 - due Wednesday, December 7:

Read carefully MF ch.12.3 BUT skip lemmata 12.4 and 12.5

### Written assignment 1:

Let  $X := \{1/n : n \in \mathbb{N}, 1,000 \leq n \leq 10,000\}$ . Consider  $X$  a metric subspace of  $(\mathbb{R}, d_{|\cdot|})$ , i.e., equipped with the Euclidean metric. Prove that any sequence in  $X$  has a convergent subsequence.