

Assignment 3

Turn in starred problems Wednesday, February 8, at the beginning of the period. See the remarks below for hints or modifications of several of these problems.

Exercises from Abbott, *Understanding Analysis*:

Section 2.2: 2(a,b), 2(c)*, 4, 5, 7*, 8*

Section 2.3: 1, 3*, 4, 5*, 6*, 7, 8

Optional extra credit problem; turn in in lecture Thursday 2/09: Abbott 2.3.11. For an extra credit problem, please to not consult any sources or work with other students. Here is a hint: if $x = \lim_{n \rightarrow \infty} x_n$, show that one may write

$$y_n - x = \frac{1}{n} \sum_{k=1}^N (x_k - x) + \frac{1}{n} \sum_{k=N+1}^n (x_k - x),$$

where $1 \leq N \leq n$. Then make the two terms on the right hand side small by separate arguments.

Remarks, hints, and further instructions:

2.2.7: Give “compelling arguments” for your answers.

2.2.8 (a)–(c): Prove that your answers are correct.