Math N1B Lec 002 Homework 4

11.3: 10, 14, 20, 32, 40

11.4: 4, 10, 16, 20, 26, 30, 38, 44

11.5: 2, 4, 8, 10, 16, 24, 32

11.6: 2, 8, 18, 20, 22, 24, 26, 28, 38

11.7: 10, 12, 16, 36

In addition to the above problems in the book, do the following problem:

Problem 1. Let $(a_n)_n, (b_n)_n$ be sequences of real numbers. Decide with justification (proof or counterexample) whether the statement is true:

(a) ? If $\sum_{n=1}^{\infty} a_n$ converges, so does $\sum_{n=1}^{\infty} a_n^2$?

(b) ? If $\sum_{n=1}^{\infty} a_n^2$, $\sum_{n=1}^{\infty} b_n^2$ both converge, then so does $\sum_{n=1}^{\infty} a_n b_n$?

(c) ? If $a_n \xrightarrow{n\to\infty} 0$, then $\sum_{n=1}^{\infty} \frac{a_n}{n}$ converges ?

If you don't have a copy of the book, see the bcourses assignment for pictures of the pages in the book containing the exercises.

Submit these problems on Gradescope by 07/21 23:59. You should do more practice problems in these sections for yourself.

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