

Last update: Wed Nov 8 16:05:45 MST 2006 /m314.fa06/handouts314/t2_314_B10/review_suggestions_2.tex

- 1 This list is not in final form. Like, stuff may yet be added to it.
- 2 Test #2 is
 - Friday
 - 11/10/06.
- 3 The test will emphasize the material of Assignments #6 – #11, roughly, that is, sections 9-14, roughly, and _____. Note that we've bypassed section 13.
- 4 Stuff to know for the test
 - (a) The definition of *Monotone Sequence*.
 - (b) What the *Monotone Sequence Theorem* says, and how it derives from more basic theorems or axioms.
 - (c) The definition of **lim sup** and of **lim inf** for a sequence (not to be confused with theorems offering alternative characterizations).
 - (d) Examples of **lim sup** and **lim inf** for some simple situations.
 - (i) A sequence for which **lim sup** and **lim inf** differ.
 - (ii) Sequences s_n and t_n for which equality fails in problem 12.4.
 - (iii) A sequence for which **lim**, **lim sup**, and **lim inf** are all different. A sequence where only two of these are the same.
 - (e) How does the proof go for what's true if sequence a_n has **lim inf**(a_n) = **lim sup**(a_n)?
 - (f) The definition of *Cauchy Sequence* (not to be confused with theorems offering alternative characterizations).
 - (g) Simple examples of Cauchy and non-Cauchy sequences.
 - (h) The definition of *Subsequence*.
 - (i) Simple examples of sequences with “essentially different” subsequences.
 - (j) The definition of the sum of an infinite series.
 - (k) The *Cauchy Criterion* for infinite series
 - (l) Cauchy's Theorem about the relation of the series. $\sum_{n=1}^{\infty} a_n$ and $\sum_{n=1}^{\infty} 2^n a_{2^n}$.

- (m) Use of Cauchy's Theorem to show the famous ***p**-series facts*.
- (n) The famous ***p**-series facts*.
- (o) The famous *Geometric-Sequence* facts.
- (p) The famous *Geometric-Series* facts.
- (q) The famous MATH-175 infinite series tests as upgraded with **lim inf** and **lim sup**.
- (r)
- (s)
- (t)