MATH 351 TEST 2 PREPARATION

How best to prepare? Review the homework exercises. Study the practice test.
Study chapter 6 and chapter 7 (sections 7.1, 7.2, and 7.3) including all the Questions in each section.

1. Learn all the definitions (exactly as they appear in Mattuck).
This includes the definition of lim sup and lim inf of a sequence as well as convergent series, absolutely convergent series, and conditionally convergent series.
Know statements of all the named theorems.

2. True and False questions may include converse, inverse, or contrapositive of well-known results in the text as well as statements that may test your intuition.
For example,

If $(a_n)^2 \to 0, then\ \sum_1^\infty a_n\ converges.$
If A and B are non-empty bounded sets, $then$ $\inf(A+B) \le \inf A + \inf B$
If A and B are non-empty bounded sets, $then$ $\sup A = -\inf(-A)$

3. Computational problems

Finding the sup, inf, max, min of a given sequence.
Finding lim sup, lim inf of a bounded sequence.
Determine if a given sequence is Cauchy using only the definition

geometric series
Sum a series
Elementary convergence tests.

4. Proofs

Cluster point theorem

Bolzano-Weierstrass theorem

completeness property for subsets of the reals

properties of sup and inf.

n^{th} term test for divergence

linearity theorem for series

tail-convergence theorem

comparison test

absolute convergence theorem