

Notes on Exam 2, Math 554, Summer 2006

1. Exam 2 is Tuesday June 20 and it covers sections 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, and 3.2.
2. Be able to DEFINE “sequence”, “the sequence converges”, “the limit of a sequence”, “monotone increasing”, “monotone decreasing”, “monotone”, “limit point”, “Cauchy sequence”, “open set”, “closed set”, “closure”, “dense set”, and “compact set”.
3. Be able to STATE: the theorem about monotone sequences, the nested interval property, both versions of the Bolzano-Weierstrass Theorem, the theorem about Cauchy sequences, the theorem which characterizes the closed sets of \mathbb{R} in terms of information about the limit points, and the Heine-Borel Theorem.
4. Be able to PROVE: both versions of the Bolzano-Weierstrass Theorem and the Heine-Borel Theorem.
5. The material on the old exams which is covered on your exam 2:
 - Exam 1 (2006): 2, 4, 6, 7.
 - Exam 2 (2000): 1, 7, 8.
 - Exam 2 (2004): 4, 6, 7, 8, 9, 10.
 - Exam 2 (2005): 3, 4, 5, 7, 9.
 - Exam 3 (2000): 1, 2, 3, 4, 5, 6, 7.
 - Exam 3 (2004): 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - Exam 3 (2005): 1, 2, 3, 7, 6.
 - Exam 4 (2000): 1, 2, 4, 6, 7.
 - Exam 4 (2004): 1, 2, 3, 4, 5, 6.
 - Exam 4 (2005): 1, 2.
 - Final Exam (2000): 1, 2, 4, 6, 7, 8, 12, 13.
 - Final Exam (2004): 1, 4, 5, 6, 7, 11, 14, 15, 16.
 - Final Exam (2005): 2, 3, 4, 5, 8, 9, 11, 12.