Stony Brook University
Mathematics Department
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Foundations of Analysis
MAT 319
October 25, 2015

Short list of topics for Midterm 2

Some of the topics listed here will be included (in a rephrased form) in the exam. It will be required to formulate the relevant definitions and theorems, and provide a detailed proofs.

(1) Geometric series, condition of convergence, the sum (Example 1 in 17.1).
(2) Comparison test (14.6).
(3) Harmonic series and its divergence (15 Example 1).
(4) Metric topology. Theorem 2.1 from the Complements, 13.6, 13.7 and 13.8 in the textbook.
(5) Continuity at a point and its relation to continuity. Section 3.2 from the Complements.
(6) Sequential continuity and its relation to Continuity. Section 3.3 from the Complements and Theorem 17.2 from the textbook.
(7) Extremal Value Theorem 18.1 from the textbook.
(8) Intermediate Value Theorem 18.2 from the textbook.