

Review for Exam I

In-class portion of exam: 100 pts.
Bring paper to work exam on.

Take-home portion of exam: 50 pts.
Take-home portion of exam due: Tuesday, Noon

1. Appendix
 - A. Axiomatic Basis for Real Numbers
 - 1) Field Axioms (9)
 - 2) Order Axioms (3)
 - 3) Completeness Axiom
 - B. Sampling of algebra theorems which you be able to prove using only the above axioms and/or theorems which logically precede the given theorem:
 - 1) Theorem 1. d., Theorem 1. f., Theorem 1. g., Theorem 1. j.
 - 2) Theorem 1. l. iv., Theorem 1. m. iii.
 - 3) Theorem 2. c. i., Theorem 2. d. i., Theorem 2. d. iii.
2. Chapter 1
 - A. Theorems whose proofs you should know.
 - 1) Theorem 1.2H. (DeMorgan's Laws)
 - 2) Theorem 1.5F. (The countable union of countable sets is countable.)
 - 3) Theorem 1.7F. (Archimedian Property)
 - B. Sampling of problems/problem types out of Chapter 1 which you be able to solve.
 - 1) pg. 4: 2
 - 2) pg. 7: 4, 7-9
 - 3) pg. 12: 2, 4, 8-9, 13
 - 4) pg. 16: 2, 5
 - 5) pg. 20: 1-2, 4, 6, 8, 11
 - 6) pg. 23: 2-5
 - 7) pg. 26: 3
3. Chapter 2
 - A. Theorems whose proofs you should know.
 - 1) Theorem 2.2B. (Limit of a sequence of non-negative numbers is non-negative.)
 - 2) Theorem 2.3B. (Uniqueness of the limit of a convergent sequence.)
 - 3) Theorem 2.5B. (Every convergent sequence is bounded.)
 - 4) Theorem 2.6B. (Every bounded monotonic sequence is convergent.)
 - B. Sampling of problems/problem types out of Chapter 2 which you be able to solve.
 - 1) pg. 28: 2-4, 6
 - 2) pg. 32: 1-2, 7
 - 3) pg. 34: 1-4
 - 4) pg. 36: 1-3
 - 5) pg. 37: 1-3
 - 6) pg. 40: 1-2, 4-9