Review for Exam I

In-class portion of exam: 100 pts.
Take-home portion of exam: 50 pts.
Bring paper to work exam on.
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