

## REVIEW FOR MATH 2202 final, December 2008

Chapters (not all sections) covered from Bartle -Sherbert :  
1, 2, 3, 4 and 5.

### DEFINITIONS:

1. One to one, onto functions ; inverse images of functions; mathematical induction; finite, countable, uncountable sets.
2. Field axioms ( negative; zero; identity; commutative, associative and distributive law); order axioms; absolute value; supremum and infimum; completeness;
3. Limit of a sequence; boundedness; subsequence; Cauchy sequence.
4. and 5. Limit of a function; cluster point; continuity; boundedness; maximum (min.) values; uniform continuity.

### THEOREMS:

1. Well ordering property.
2. Archimedean thm. and corollaries; density thm.; nested intervals thm.
3. Uniqueness of limits of sequences; convergence and boundedness of sequences; theorem on operations on sequences and limits; squeeze theorem; Bolzano-Weierstrass thm.; Cauchy criteria thm.
4. Uniqueness of limits of functions; boundedness; sequential criteria; divergence criteria; limits and operations on functions; squeeze thm.
5. Sequential continuity; continuity and operations on functions; boundedness thm.; max- min. thm.; Bolzano intermediate value thm.; preservation of closed bounded intervals; preservation of intervals; uniform continuity thm.; continuous extension thm.