Review for Test 3

You need to know all definitions and facts listed below. You also need to know proofs of some facts indicated by (with proof). Please also review homework problems and examples from class.

1. **Absolute value.** Properties of absolute value. Triangle inequality (with proof).

2. **Chapter 17.** Sets. Definitions of unions, intersections, differences, and complements of sets. Propositions 17.1 (with proof) and 17.4 (with proof).

3. **Chapter 19.** Functions. Definition of a function. Definitions of injective (one-to-one) and surjective (onto) functions, bijective functions. Definition of inverse function, composition of functions. Proposition 19.2 (with proof).

4. **Chapter 21**. Definitions of what it means when card(A)=card(B). Definition of an equivalence relation. Proposition 21.1 (with proof). Definition of a countable set.
Proofs that rational numbers are countable and that real numbers are not countable.
Definitions of inequalities between cardinal numbers (p. 195) and notes. Schroder -Bernstein theorem (notes).