DISCRETE MATHEMATICS
Math 245
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Suggestions for Preparing for the Fourth Exam

I. Know the basics!

- State the well-ordering principle.

- State the principle of induction.

- Be able to use summation and product notation.

- Be able to use recursive formulas.

II. Know the formulas for the following sums:

- The sum of a geometric sequence.

- The sum of the first n integers.

II. Know how to prove by induction!

- Use full sentences.

- State the predicate.

- Prove the base step.

- State the assumption for the inductive step.

IV. Understand recursive formulas:

- Find the first several terms of a sequence given the intial terms and the recurrence formula.

- Find the formula for the nth term as a function of n for some simple examples.

- Given the initial terms and the recurrence formula for a sequence and given a formula for the nth term as a function of n prove that the latter is correct.