

DISCRETE MATHEMATICS

Math 245

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Suggestions for Preparing for the Third 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.

III. 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 initial terms and the recurrence formula.
- Find the formula for the n th 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 n th term as a function of n prove that the latter is correct.