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 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.