

Name (please print):

Math 213, Spring 2006  
HW Assignment 3

## Instructions

- **Write your name on the cover sheet and staple the sheet to the assignment.** Do the problems in order, and make sure that each problem is clearly labelled.
- **Write-up:** An answer alone (e.g., “true”, or “39”, or “ $n^2$ ”), without justification, will not earn credit. You must write up your solution in a clear, logical manner, using appropriate language (e.g., “therefore”, “since”, etc.) or logical symbols (e.g., “ $\implies$ ”) to explain key steps and to connect statements or formulas. Writing down a simple list of formulas, without such “connectors”, does not constitute a proof. Use the examples worked in class or those in the book as models for your own solutions.
- **Deadline:** The assignment is due in class on Friday; late homework, or homework dropped off in mailboxes, will not be accepted. (You can, of course, turn in the homework early, in my office, any time before the due date).
- **Tips:** The problems are taken from the even-numbered problems in the Rosen text. Most are similar to odd-numbered problems from the day-to-day non-graded assignments, for which there are answers in the back of the Rosen text and detailed solutions in the “Student Solution Guide”. Think of the non-graded assignments as a warmup or practice for the graded HW assignments. If you have been diligent in doing these non-graded assignments, as well as the daily reading assignments, you should have no difficulty with the graded assignment (and the same goes for exams).
- **Open House:** I will have an “Open House”, tentatively scheduled for **Thursday**, Feb. 9, 6 - 7 pm, in 147 Altgeld. Feel free to stop by with questions about the homework or anything else relating to this course!

## Problems

- **Internet:** Go to Neil Sloane’s “Online Encyclopaedia of Sequences”, <http://www.research.att.com/~njas/sequences>, and print out the description page of an interesting sequence. Attach that printout to the assignment. (One way to get interesting sequences is through the “Webcam” link.)
- **Section 3.2:** 4(a)(c), 14(a)(d), 16(a)(d), 18(a)(c), 30
- **Section 3.3:** 2, 4, 6, 8, 12

**About these problems.** The problems from 3.2 are exercises that test your understanding of the notations for sequences, summations, and products. Most have a numerical answer, but make sure to clearly show how you arrived at this answer (e.g., write explicitly  $1 \cdot 2 + 2 \cdot 3 + 2 \cdot 2 + 2 \cdot 3 = 18$ , instead of just 18).

The problems from 3.3 all require proofs by induction. Follow the class or book examples in writing up these proofs.