

Name:

Collaborator(s)¹:

Math 453, Section X13, Prof. Hildebrand, Spring 2011

HW Assignment 3, due Monday, 2/14/2011

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. **The assignment is due in class at the above due date; 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).
- **Getting help:** Open House hours are Wednesdays and Thursdays, starting at 5 pm, in 159 Altgeld. I'll stay as long as needed—there have been occasions in the past I was there for two or three hours straight. In addition, I'll usually be available Sunday afternoons, beginning at around 3 pm, in the same room. The Sunday date should be reserved for left-over problems and last-minute questions. For the time being, I will keep the due date for the homework at Monday, but don't wait till Sunday with doing the homework. The homework will be given out Monday, so get started early in the week and take advantage of the Wednesday/Thursday Open House hours to get all or the bulk of the homework done.
I'm happy to answer short questions by email (ajh@illinois.edu); for questions that require a longer, more technical, answer, however, email is not a suitable medium, and it is better to ask in person.
- **Write-up:** Solutions, rather than answers, are expected for all problems. Even for non-proof problems, an answer alone (“23”, “yes”, “true”, “false”) is not sufficient; you need to show how you arrived at the answer. Some of the problems require formal proofs. Proofs must be properly written up, with correct mathematical notation and terminology, and in complete sentences. Use the examples from in class and in Strayer text as models for your own proofs. You can use any result covered in class, the class handouts, and the relevant sections of the Strayer text.

HW 3 Problems

All problems are from Chapter 2 of Strayer, Sections 2.1–2.2. **Only turn in those problems marked by an asterisk.** Problems marked by an “H” have a hint in the book or below.

1. *3(a)
2. *11
3. *14
4. *18
5. *22(a)(b)(c) (Hint: You may use the various divisibility tests given in Section 2.1 and in Problems 18 and 19.)
6. *26 (You will need to apply a theorem from Chapter 1. (which one?) Is the result true without the hypothesis that p is prime?)
7. *29(b)(d)
8. 1(a)(b)
9. 2(a)(c)
10. 4(a)(c)(e)
11. 28(a)(c)

¹If you worked with another student or in a small group on this assignment, list the names of all students involved.