

Name:

Collaborator(s)¹:

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

HW Assignment 1, due Monday, 1/31/2011

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:** First and foremost, take advantage of my Open House, which will begin this week and be Wednesdays and Thursdays, 5 pm – 6 pm (and beyond if necessary), in 159 Altgeld. The Open House is an informal office hour for students in my classes and is intended as the main point of contact. I'd also be 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.
- **Solutions versus answers:** 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.
- **About proofs:** 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.

When working with concepts like “divisibility” or “prime”, you have to use the “official” definitions of these concepts, and not any preconceived or intuitive notions.

In your proofs, you can use any result covered in class, the class handouts, and the relevant sections of the Strayer text (but not, for example, a result found in another book). *When using such a result in the course of a proof, say so, and cite the specific result used (e.g., “by Prop. 1.6(a) in Strayer” or “by Theorem 1.11”).*

HW 1 Problems

All problems are from Chapter 1 or Strayer, Sections 1.1–1.3. **Only turn in those problems marked by an asterisk.** The non-asterisk problems are for the most part of warmup/quickie/no-brainer type, problems that test your knowledge of definitions and theorems, and easy computational problems, with answers in the back of the book. Problems of this sort aren't suitable as graded hw problems, but you should be prepared for such problems to come up in exams, so make sure you do not neglect these problems.

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|-----------------|---------------|-----------------|
| 1. *6(a)(b) | 8. 1(a)(c)(d) | 14. 18 (a) |
| 2. *8 | 9. 2 | 15. 20 |
| 3. *14(a)(b)(c) | 10. 3(a)(e) | 16. 21(a) |
| 4. *23 | 11. 7 | 17. 32(a)(c) |
| 5. *30 | 12. 16 (a)(b) | 18. 33(a)(b)(c) |
| 6. *36 (a)(b) | 13. 17 | 19. 35 |
| 7. *41 | | |

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