

CS 520
Guidelines for Homework
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Here are some suggestions for you. Some of them are particular to our course and some are useful for solving problems in other courses, doing your research, and writing your own documents.

- 1) Generally you will spend more time thinking about what to do mathematically than in actually doing it.
- 2) Do each problem on a separate page, to make it easy to revise your work. As an alternative, you can use a technical text preparation system like TeX or LaTeX.
- 3) This is not a class in programming. Accordingly, if you use a computer to do something, just explain what the solution process was and what result you got.
- 4) Clearly written pseudocode is OK any time you are asked to produce an algorithm.
- 5) Get in the habit of checking your work for correctness. You can use a system like Maple or Mathematica to check your algebra. Plugging random values into any purported equation is another easy test.
- 6) When you encounter a hard problem, consider easy and special cases first. You can then develop the results about special cases to more general cases.
- 7) If you observe a property, try to figure out why it happens, and with what theory it can be explained
- 8) When you write up a solution, do not assume that your reader already knows the answer. Just assume that he or she has a strong background in the subject but happens to be new to what you are trying to explain.
- 9) If you use your own abbreviations or variables, define them first.
- 10) A mathematical proof consists of a logically correct argument for some assertion. Ideally, it is a sequence of true statements, each of which is either an assumption or follows from some previously proved statements. Most people's proofs fail because some assertion is incorrect.
- 11) Think about the context of each problem. What preceded it, and what follows? Why do you think you are being asked to solve it? Once you have solved it, what other questions come to mind?