

Homework in Math 142 (updated Sep 28, 2002)

Two types of homework problems will be assigned in Math 142:

1. Calculations, where the answer to the problem is a number, or a graph, or a diagram. In these problems, show all your work, and if you use a new idea or clever method, indicate what kind of method you use.
2. Explanations/proofs, in which you are asked to “Show that...” or “Explain why...” something is true. In these problems, the point is basically to give an explanation in complete sentences. For more details, see the handout on writing proofs.

Some problems may be a combination of these two types. For example, you might be asked to list all graphs of a certain type, and then you might be asked to explain why/show that your list is complete.

You will have several chances to work on, and revise, all homework problems. Specifically, this process has 3 steps: draft, submission, and revision.

1. A draft of each problem set will be due two classes before the completed version is due. For example, the first problem set is due **Fri Sep 06**, so the first draft is due **Fri Aug 30**.

In each first draft, you should do the following for each problem to be turned in:

- (a) **Write down the definition of each important term in the question** (e.g., graph, vertex set, isomorphic), especially those terms that you don't remember right away. If a term shows up in more than one question, you only need to write down its definition once. The point is to show that you understand what each question is asking.
- (b) **Write down the goal of the question.** If the question is a calculation, write down what kind of object you need for your final answer; if the question is a proof, write down what needs to be proved, in the form of an if-then statement. (Again, if you do the same kind of calculation several times, you just need to describe the goal once.)
- (c) **Write down at least one possible approach to the problem.** For a calculation, this could be something like “Imitate example 2” or “Apply the Addition Principle.” For a proof, you should note some definitions or theorems that might be relevant, e.g., “Use the Binomial Theorem.” Your approach need not be correct for you to get full credit for your draft; you just need to show that you have an idea of where to start the problem.

I'll make every effort to mark up your drafts and get them back to you by the next class, so you can use the feedback I give you when you're finishing the problem set.

2. Submit the completed version. There is no need to include your draft with the completed version, unless you are incorporating work from the draft in the completed version.

3. After you get the graded problem set back, you have as many chances as you want to revise the problems as much as you like, until the next in-class exam. (The time limit is imposed to keep things a little more manageable.) Each time you submit a revision, include the original completed version and all previous revisions, so I know how many points to add on to your score. You do not need to revise/rewrite questions that you have previously gotten correct; just correct the ones you got wrong.