

## Homework 0

Out: *Sep 2*Due: *Sep 6*

- *This is a dummy homework to familiarize you with the codePost system for submissions and peer grading. Your score on this homework will not count toward your grade, but you will submit and grade it to check that it runs smoothly. The typical homework instructions are provided below so that you will get used to seeing them, but they do not all apply.*

**Instructions:**

- Upload your solutions (to the non-extra-credit) to each problem as a **separate PDF** file (one PDF per problem) to codePost. Please make sure you are uploading the correct PDF! Please anonymize your submission (i.e., do not list your name in the PDF), but if you forget, it's OK.
- If you choose to do extra credit, upload your solution to the extra credits as a single separate PDF file to codePost. Please again anonymize your submission.
- You may collaborate with any classmates, textbooks, the Internet, etc. Please upload a brief "collaboration statement" listing any collaborators as a separate PDF on codePost (if you forget, it's OK). But always **write up your solutions individually**.
- For each problem, you should have a solid writeup that clearly states key, concrete lemmas towards your full solution (and then you should prove those lemmas). A reader should be able to read any definitions, plus your lemma statements, and quickly conclude from these that your outline is correct. This is the most important part of your writeup, and the precise statements of your lemmas should tie together in a correct logical chain.
- A reader should also be able to verify the proof of each lemma statement in your outline, although it is OK to skip proofs that are clear without justification (and it is OK to skip tedious calculations). Expect to learn throughout the semester what typically counts as 'clear'.
- You can use the style of Lecture Notes and Staff Solutions as a guide. These tend to break down proofs into roughly the same style of concrete lemmas you are expected to do on homeworks. However, they also tend to prove each lemma in slightly more detail than is necessary on PSets (for example, they give proofs of some small claims/observations that would be OK to state without proof on a PSet).
- Each problem is worth twenty points (even those with multiple subparts), unless explicitly stated otherwise.

**Problems:**

§1 Write one thing you are excited to learn about in this course, or something else you are looking forward to. (One sentence is more than enough.)

§2 Write a short, concise, response to this problem that you believe the peer grader who reads it will accept wholeheartedly.

Hint: There are no wrong answers to this problem; only heartless graders.

**Extra Credit:**

§1 (extra credit) Come up with an outrageously complex and inscrutable proof of a very simple statement (mathematical or otherwise). It should be logically sound and ideally no more than half a page, but much shorter is perfectly fine as well.

Note that if you write this way on any other problem in the course, you may not get full credit. This is your one chance to do so.