

1 Administrivia

- (a) Make sure you are on the course Piazza (for Q&A) and Gradescope (for submitting homeworks, including this one). Find and familiarize yourself with the course website. What is its homepage's URL?
- (b) Read the policies page on the course website. What is the percentage breakdown of how your grade is calculated?

Solution:

- (a) The course website is located at <http://www.eecs70.org/>.
- (b) The test-only grade is 25% from each midterm, 49% from the final, and 1% from sundry credit. The homework-option grade is composed of 15% homework and 85% test-only grade.

2 Course Policies

Go to the course website and read the course policies carefully. Post questions on Piazza if you have any questions. Are the following situations violations of course policy? Write "Yes" or "No", and a short explanation for each.

- (a) Alice and Bob work on a problem in a study group. They write up a solution together and submit it, noting on their submissions that they wrote up their homework answers together.
- (b) Carol goes to a homework party and listens to Dan describe his approach to a problem on the board, taking notes in the process. She writes up her homework submission from her notes, crediting Dan.
- (c) Erin finds a solution to a homework problem on a website. She reads it and then, after she has understood it, writes her own solution using the same approach. She submits the homework with a citation to the website.
- (d) Frank is having trouble with his homework and asks Grace for help. Grace lets Frank look at her written solution. Frank copies it onto his notebook and uses the copy to write and submit his homework, crediting Grace.

- (e) Heidi has completed her homework using \LaTeX . Her friend Irene has been working on a homework problem for hours, and asks Heidi for help. Heidi sends Irene her PDF solution, and Irene uses it to write her own solution with a citation to Heidi.

Solution:

- (a) Yes, this is a violation of course policy. All solutions must be written entirely by the student submitting the homework. Even if students collaborate, each student must write a unique, individual solution. In this case, both Alice and Bob would be culpable.
- (b) No, this is not a violation of course policy. While sharing *written solutions* is not allowed, sharing *approaches* to problems is allowed and encouraged. Because Carol only copied down *notes*, not *Dan's solution*, and properly cited Dan's contribution, this is an actively encouraged form of collaboration.
- (c) No, this is not a violation of course policy. Using external sources to help with homework problems, while less encouraged than peer collaboration, is fine as long as (i) the student makes sure to understand the solution; (ii) the student uses understanding to write a new solution, and does not copy from the external source; and (iii) the student credits the external source.
- (d) Yes, this is a violation of course policy, and both Frank and Grace would be culpable. Even though Frank credits Grace, written solutions should never be shared in the first place, and certainly not copied down. This is to ensure that each student learns how to write and present clear and convincing arguments. To be safe, try not to let anybody see your written solutions at any point in the course—restrict your collaboration to *approaches* and *verbal communication*.
- (e) Yes, this is a violation of course policy. Once again, a citation does not make up for the fact that written solutions should never be shared, in written or typed form. In this case, both Heidi and Irene would be culpable.

3 Use of Piazza

Piazza is incredibly useful for Q&A in such a large-scale class. We will use Piazza for all important announcements. You should check it frequently. We also highly encourage you to use Piazza to ask questions and answer questions from your fellow students.

- (a) Navigate to the "Index" Piazza post, where you can find links to most resources in the course. Write down the Piazza post number for the Note 0 Thread. (When you see $@x$ on Piazza, where x is a positive integer, then x is the post number of the linked post.)
- (b) Read the Piazza Etiquette section of the course policies and comment on the following student question on Piazza: "Can someone explain the proof of Theorem XYZ to me?" (Assume Theorem XYZ is a complicated concept.)

Solution:

- (a) The post number for the Note 0 Thread is 13.
- (b) There are two things wrong with this question. First, this question does not pass the 5-minute test. This concept takes longer than 5 minutes to explain, and therefore is better suited to Office Hours. Second, this question does not hone in on a particular concept with which the student is struggling. Questions on Piazza should be narrow, and should include every step of reasoning that led up to the question. A better question in this case might be: "I understood every step of the proof of Theorem XYZ in Note 2, except for the very last step. I tried to reason it like this, but I didn't see how it yielded the result. Can someone explain where I went wrong?"

4 L^AT_EX

We highly recommend that you use L^AT_EX to submit your homework. L^AT_EX is a document preparation system that puts mathematical formulae into nicely formatted documents. Using L^AT_EX can help you organize your thought process and make lives easier for readers. We have provided some resources on the course website to help you get started with using L^AT_EX. Feel free to ask questions on Piazza if you have any questions.

For this question, try to typeset the following formulas. This will give you some practice writing mathematical formulas properly. Of course, if you choose to hand-write your solutions and scan them, then this is trivial.

(a) $\forall x \exists y ((P(x) \wedge Q(x, y)) \implies x \leq \sqrt{y})$

(b)
$$\sum_{i=0}^k i = \frac{k(k+1)}{2}$$

Solution:

(a)

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\forall x \exists y
\left(\left(P(x) \wedge Q(x, y)\right) \implies
x \le \sqrt{y}\right)
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(b)

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\displaystyle \sum_{i = 0}^k i = \frac{k(k + 1)}{2}
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