

## How to prepare for the final

Math 2111, Dec 14, 2005

- Start by reviewing all the definitions. Understand what the definition says and think about a few examples that fit the definition and a few that don't. Think about why we bother to define the term. What do we use it for? While you can write down definitions on your cheat sheets, do so only as a safety measure. If you are relying on your cheat sheet you look up definitions, you are probably in trouble.
- Review theorems. Understand what the theorem says and how its proved. Don't read proofs line by line, try to see the big picture. Don't memorize proofs, remember a few key ideas. Test yourself by writing down a proof without looking at the textbook or your notes. Don't do this right after reading the proof, let some time pass first. Test your proof on a classmate. Are they convinced?
- Look at applications. How are the examples used? How are the theorems used? Don't focus on the details, think about the method that the example is meant to teach you.
- Don't be content with reading examples of computations. Following someone else's work is very different from doing your own. Work out your own examples down to every detail.
- Review the problems on the HW, exams, and quizzes. If you did the problem correctly, do you still know how to do it? If you made a mistake, understand why it's a mistake. Have you since figured out how to solve the problem?
- Test yourself. Below are some exercises you can test your skills on. Don't feel you have to do them all. You won't have time in the next 4 days. Pick some and use them to check how well-prepared you are and to identify gaps and weaknesses in your knowledge.
  - The exercises in the lecture notes on complex numbers, modular arithmetic, operations, and fields,
  - The true/false questions and the quizzes at the very end of Chs. 1-3 and 5. (T/F question 7 in Ch. 5 deals with similarity of matrices, which we didn't cover.)
  - Ch. 1 Supplementary Exercises 5, 12, 16–18, 20–22
  - Ch. 2 Supplementary Exercises 1, 5, 6, 12, 14, 17
  - Ch. 3 Supplementary Exercises 9, 10, 12, 15, 16, 19–21, 25, 31–33
  - Ch. 5 Supplementary Exercises 1–4, 6, 8, 9, 20, 21