

Study Guide for the Final

The final will cover all the sections we've previously covered on Exams 1, 2, and 3 as well as Sections 7.1 and 7.2. Therefore, a complete list of topics can be found from the previous study guides along with the topics listed below for Chapter 7.

On the exam, you can expect several proofs, TRUE/FALSE questions, and give-an-example-of type questions. The problems that have been assigned in class (but not necessarily graded) or very similar problems could appear on the exam; therefore it is **highly** recommended that you make every effort to complete those problems.

Chapter 7 Topics:

1. Definition of a group and an abelian group.
2. Examples of groups and their operations, e.g., \mathbb{Z}_n , U_n , S_n , D_n , Theorem 7.4, etc.
3. Definition of the order of a group.
4. Relationship between groups and rings, e.g., Theorems 7.1 and 7.2.
5. Basic properties of groups, Theorem 7.5 and Corollary 7.6.
6. Definition of the order of an element in a group and finding the order of an element in a group.
7. Basis properties of the order of an element, Theorem 7.8.

To prepare for this test, you should make sure that you have done each of the following:

- **Rewritten your class notes.** Anything that I asked you to finish, make sure you know how to finish it. You should understand all of the proofs and be able to apply the proof techniques used in class to similar problems.
- **Finished all of the homework problems,** even the ones that are not graded. Just because a problem was not graded does NOT mean that it is unimportant. Similar questions could appear on the exam.