

What to study for the final (MAT312/AMS351 SUMMER Session II 2006)

The exam is **cumulative** but more stuff from after the midterm will be on the test. (at a ratio of 3 to 7). Check the syllabus page for the chapters we have covered.

Again, no calculators are allowed. Exam is longer (and harder), so be prepared to stay until the end of class – or even as much as 15 minutes after.

1. Because of the nature of the topic– Group Theory, you will be seeing **much more** proof problems. I will put 2 or more questions asking you to do a proof of a theorem in the book. But since there are so many proofs in the book, some less 'beautiful' than others, I am writing down which proofs you should know and you might be asked to reproduce on the exam. (You'll only be asked from these.)

These are : Theorems 4.2.2, 4.2.3, 4.2.5, 5.1.6 , **All theorems and corollaries in 5.2**, and 5.3.4

(Suggestion: Rather than trying to memorize the whole proof, which I know some of you will attempt, try to understand the main idea of the proof.)

2. Some easier proof problems will appear on the exam, similar to such proofs you see in example 4 of 1.6, examples in 3.3 and exercises in 3.3.

3. These problems **will** appear on the exam.

a. Linear congruence problem as in p.53–54. You should also be able to tell when a linear congruence does not have a solution, has exactly one solution up to congruence, or has more than one solution.

b. Finding order and sign of a given permutation. (See 4.2 exercise 1,6,7,9)

c. One problem asking you to give examples of something. (4.2 exercise 2,3,5, 5.1 exercise 3,5 and 5.3 exercise 4)

d. Classification of groups of finite order (5.3)

4. There will be only one problem from 5.4, similar to exercise 2 and 6 of 5.4.

5. I will put some simple true/false questions. Exercise 1 of 4.3 being one of them. But the true/false questions will come from all different parts of the book. This is to see how much understanding you have about the subject you learned. So reading through the book might help you.

Things I wrote in 1 through 4 are what I consider as the important stuff you should know, if you've passed this class. So please study these first. After learning them, then try reading through the textbook or even breeze through some other abstract algebra books. (yeah, sure – I heard that.)