Math 112-40, Mr. Church
Studying for the second midterm

TOPICS COVERED

These are the sections of the book that we have covered since the first midterm, and which could appear on the test.

- Section 2.2: Inequalities and Order
- Induction
- Section 3.1: Divisibiliy
- Section 3.2: Greatest Common Divisor
- Section 3.3: Primes
- Section 4.1: The Division Algorithm
- Section 4.2: The Euclidean Algorithm and GCDs
- Section 4.3: The Fundamental Theorem of Arithmetic
- Least Common Multiples (part of Section 5.2)
- Section 6.1: Congruences

STUDY QUESTIONS

I have divided up all the questions from the textbook according to which would be good to study. As before, these are not recommendations, just a rough guide as to which questions are too hard or too easy to look at.

Good. These questions would be good ones to study. Some are more important than others, of course, but you should be able to do all of them. I have italicized the questions that appeared on the homework, and bolded the others that would be best to start with.

- Chapter 2: *10*, **11**, 12, 13, 14
- Chapter 3: *2*, *7*, *8*, *9*, *10*, **11**, *12*, 13, 14, 15, *16*, *17*
- Chapter 4: **1**, **3**, *4*, **6**, 11, **12**, 13, 14, 15, **17**, **18**, 20, 22, 23
- Chapter 5: **20**, 21[1]
- Chapter 6: *1*, **2**, 3, 4, **5**, **7**, 10, **11**, 12[2]

Difficult. These questions are too difficult and even though some are interesting, they would not be an efficient use of your time.

- Chapter 2: 15, 16, 18, 19, 22
- Chapter 3: 18, 19
- Chapter 4: 5, 7, 8, 9, 10, 19, 21, 24, 25

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[1]The book uses the notation "$[a, b]$" for "$\mathrm{lcm}(a, b)$".
[2]The other exercises from Chapter 6 deal with material we have not yet covered.

Basic. These questions are too basic to be worth looking at, or are stated too imprecisely.

- Chapter 2: 17, 20, 21
- Chapter 3: 1, 3, 4, 5, 6
- Chapter 4: 2, 16, 26

Practice problems. Most practice problems are useful, because you can compare your answer with the solution in the book. These are the ones I think are most useful.

- Chapter 2: 5, 6, 7
- Chapter 3: 1, 4, 5
- Chapter 4: 1, 3, 4
- Chapter 5: 8
- Chapter 6: 1, 2, 3, 4