Math 2513
Review for Second Exam
Oct. 19, 2012

The second exam will be over the material in sections 2.3, 2.4, 4.1 and 4.2 of the text, covered on Assignments 5, 6, and 7. Below is a review of these sections in the text.

2.3. Functions. In class we've covered the material in this section from the beginning through page 147 (omitting the material on pages 148 to 152). You should review all of this. The first part of this section was also covered on the first exam, but will still be necessary for the second exam.

2.4. Sequences and Summations. In this section, we just covered from the beginning through page 162. We haven't talked about summations much yet, and there won't be a question on the second exam specifically about summations, but it would still be a good idea to look at a couple of the examples on page 164. We will be talking about summations more in Chapter 5.

2.5. Cardinality of Sets. I spent a little time on this topic in class just because it's interesting, and illuminates the notion of "set", but this material will not be covered on the exam.

4.1. Divisibility and Modular Arithmetic. We covered this entire section in class. You should review it in detail. Also remember that we did some examples in class of how to use modular arithmetic to easily find the value of expressions like 20^{511} **mod** 3 or 5^{164} **mod** 7, without using a calculator.

4.2. Integer Representations and Algorithms. We covered all the material in this section in class, except that we did not discuss how to write computer programs for addition and multiplication in base b. When reviewing this section, you can skip the algorithms written in pseudo-code, in the blue boxes. Instead be sure to know how do addition and multiplication base b by hand. There are not many examples in the text, so after reading those you should supplement them with the examples done in class. Also, be sure you know the formula in Theorem 1, which relates an integer n to the digits a_0, a_1, ... , a_k of its expansion in base b.