Math 4370   **COMBINATORICS**   Spring 2012
Dr. Duval   **Homework**

Thursday, April 5

Follow the separate general guidelines for Parts A,B,C. Be sure to include and label *all four* standard parts (a), (b), (c), (d) of Part A in what you hand in.

Products of ordinary generating functions, part 2
Subsection 3.3.1 (starting from Example 3.17)

A: Reading questions. Due by 3pm, Mon., 9 Apr.

1. Explain why the Product Formula applies to Example 3.17.

2. Example 3.17 mentions 2-dollar bills. Have you ever seen a 2-dollar bill?

3. Where in the solution to Example 3.17 can you easily see the answer to the question of how many ways to make $13 from 1-dollar, 2-dollar, and 5-dollar bills? In other words, you should be able to answer this question without doing any calculations of your own, but you can look up anything you like in the textbook.

4. In the middle of p. 153, you are told to "verify your understanding of [Example 3.17] by trying to find the summands on the right-hand side [of the displayed equation near the top of the page] that correspond to partitions of 5 into allowed parts." Do this.

5. At the end of the section, you are told to explain why formula (3.24) holds. Do this.

B: Warmup exercises. For you to present in class. Due by the end of class Tue., 10 Apr.

1. **3.10 Supplementary Exercise:** 9.