MATH 636, Fall 2015
Homework 6
To be prepared for presentation on Friday, September 25.

Background reading: Combinatorics: A Guided Tour, Sections 2.1 and 2.2.

Only consult with your classmates or professor to discuss the problem set.

We will discuss solutions to these questions in class.

6-1. Use the square-domino interpretation of the Fibonacci numbers to give a **combinatorial proof** that

$$f_{2n} = 1 + \sum_{i=1}^{n} f_{2i-1}.$$

6-2. Understand and explain to the class the proof of Theorem 2.1.2. The proof relies on the argument given in Combinatorial Proof #2 on page 55 and the solution to Question 62.

6-3. Give a combinatorial proof of each of the identities in Exercise 2.2.4c and 2.2.4f.