CSci 1302 Assignment 8
Due Wednesday, April 4th in class

Problem 1 (16 points). Exercises 9, 11, 14, and 16 p. 226.

Problem 2 (20 points). Exercises 10, 17, 22, 25, and 29 pp. 233-234.

Problem 3 (4 points). Fibonacci numbers are defined as $F_0 = 0, F_1 = 1$, and for all $k \geq 2$ $F_k = F_{k-1} + F_{k-2}$. Use strong induction to prove the following property of Fibonacci numbers: $F_{n+m-2} = F_n F_{m-1} + F_{n-1} F_{m-2}$. Here $n \geq 2, m \geq 2$. Please point out the part of the proof where you had to use strong induction.

Hint: you should do induction on n only and assume that m is fixed. The other way around (induction on m with n fixed) should work as well, but you cannot do induction on both.