Homework 6

CS 3233 – Fall 2003 assigned October 16, 2003
Tom Bylander, Instructor due October 23, 2003

1. (40 pts.) Do Exercise 4.1.20.
2. (10 pts.) Do Exercise 4.2.12.
3. (20 pts.) Do Exercise 4.3.20
4. (10 pts.) Do Exercise 4.4.4.
5. (10 pts.) Do Exercise 4.4.8.
6. (10 pts.) Do Exercise 4.4.12.
7. (10 pts. Extra Credit) Do Exercise 4.1.42. Provide both the exact number and the calculation that corresponds to the problem's structure.
8. (10 pts. Extra Credit) 20 students are sitting in 30 chairs, all in one line. Let $a_{i,j}$ = the number of students sitting from chair i to chair j. For what values of n can we make the following guarantee? That no matter how the students are sitting in the chairs, there exists some $a_{i,j}$ such that $a_{i,j} = n$.
9. (10 pts. Extra Credit) Do Exercise 4.3.38.
10. (10 pts. Extra Credit) As precisely and consisely as possible, provide a big-Oh estimate of $\binom{2n}{n}$. Hint: Look up Stirling's formula.