# Computer Science 2300: Homework 3

### Due: February 12, 2008

**Note:** Please use rigorous, formal arguments. If you are asked to provide an algorithm then you may either write pseudocode similar to the pseudocode in the DPV text, or provide a clear description in English (similar to the description of the permutation algorithm given in the Homework 1 handout). You **must** also provide an argument for why the algorithm is correct. All problems this week are from the DPV text. We encourage you to collaborate with other students, while respecting the collaboration policy. Please write the names of all the other students you collaborated with on the homework.

1. (10 points) Problem 3.4 (page 96).

2. (5 points) Problem 3.6 (page 96).

3. (5 points) Problem 3.11 (page 97). (Note: Linear time means $O(|E| + |V|)$)

4. (10 points) Problem 3.25 (pages 99-100).

5. (20 points) Problem 3.28 (page 101). (10 points for parts (a) through (c) and 10 points for parts (d) through (f), which are more challenging).