Computer Science 2300: Homework 3

Due: March 4, 2010

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. 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. (5 points) DPV Problem 2.14 (page 73).

2. (10 points) DPV Problem 2.17 (page 74).

3. (10 points) DPV Problem 3.4 (page 96).

4. (5 points) DPV Problem 3.11 (page 97). (Notes: Linear time means $O(|E| + |V|)$. Also, you cannot use an edge more than once (e.g. in both directions) in a cycle).

5. (10 points) DPV Problem 3.18 (pages 98-99).

6. (10 points) DPV Problem 3.24 (page 99).