

Computer Science 2300: Homework 3

Due: February 16, 2009

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. (10 points) DPV Problem 3.4 (page 96).
2. (5 points) DPV Problem 3.11 (page 97). (Note: Linear time means $O(|E| + |V|)$)
3. (20 points) DPV Problem 3.28 (page 101). (10 points for parts (a) through (c) and 10 points for parts (d) through (f), which are more challenging).
4. (10 points) CLRS Problem 22.4-5 (page 552).
5. (10 points) CLRS Problem 22.5-7 (page 557).