

Computer Science 373 – Analysis of Algorithms  
Prof. Steven Skiena  
Spring 2008

Homework 3 – Graph algorithms  
Due Thursday April 3, 2008

Each of the problems should be solved on a separate sheet of paper to facilitate grading. Limit the solution of each problem to one sheet of paper. Please don't wait until the last minute to look at the problems.

All numbered problems come from the manuscript of the second edition of *The Algorithm Design Manual*, by Skiena. Interested students may attempt the extra credit programming challenges problems described at the end of the relevant chapters for a small amount of additional points – small enough that you should be motivated primarily by interest and not greed.

1. Exercise 5-4.
2. Exercise 5-7.
3. Exercises 5-12 to 5-14.
4. Exercise 5-19.
5. Exercise 5-25.
6. Implement an algorithm to print out the connected components in an undirected graph (in whatever language you wish). Test files will be provided on my WWW page. Turn in a print out and the output on all my examples.
7. Exercises 6-4 and 6-5.
8. Exercise 6-9.
9. Exercise 6-15.
10. Exercise 6-17.