

CMSC 451: Homework 1, Spring 2005

Due at the beginning of class on **February 15, 2005**.

Warning: some of the problems require thought - do not wait until the last day to start working on them!

If you cannot come up with algorithms that run in the required time, then provide (correct) slower algorithms for partial credit. Write your answers using *pseudo-code* in the same style as the textbook. These make the algorithm description precise, and easy to read (as opposed to code in C or some other language).

1. Problem 1 in Section 3.8, page 101 of the textbook.
2. Problem 3 in Section 3.8, pages 101-102 of the textbook.
3. Problem 5 in Section 3.8, page 102 of the textbook.
4. Problem 7 in Section 3.8, page 103 of the textbook. (Hint: if G is not connected, consider the smallest connected component of G .)
5. (**For graduate students only.**) Problem 10 in Section 3.8, pages 104-105 of the textbook.