

CSE 326 DATA STRUCTURES HOMEWORK 7

Due: **Wednesday, August 8, 2007** at the beginning of class.

1. Problem 9.53. You don't have to write actual Java code for this, but explain in a sentence or two how you would use shortest-path algorithms to solve the problem.
2. Weiss, problem 9.39. In this problem, linear time means $O(|V| + |E|)$. Again, you don't have to write very much for this problem. (Side note: This problem is easier than it looks. But the next step, asking whether a graph is 3-colorable, is NP-complete.)
3. Weiss, problem 9.38.
4. Problem 9.44. Be sure to argue why your algorithm is correct. Hint: Pick an arbitrary node as the root, then consider the problem of finding two leaf nodes of maximum distance. The path may not necessarily go through the root.