

CS 381 Assignment 11 due Friday, Dec. 1, 2006

Please write your name and net id on all pages turned in. We need net id to record your grade. If you turn in each problem on a separate sheet we will grade your problems in parallel and get your assignment back to you by the following Wednesday. If you turn in homework not on separate sheets we will circulate your homework and grade the problems in serial and thus it will likely be delayed somewhat in getting back to you.

1. Give a polynomial time bounded algorithm for determining if a Boolean formula in conjunctive normal form with two literals per clause is satisfiable.
2. Write out a clear proof that undirected graph three colorability is NP-complete. Assume that 3-CNF satisfiability is NP-complete.
3. In the directed subgraph below prove that any path that traverses all vertices must enter and leave the subgraph in the same column. Note that the path may enter the subgraph more than once.

