CS 466/666 Spring 2013
Assignment 4
Due Noon, June 10, 2013

You are on your honour to present your own work and acknowledge your sources.

1. [6 marks: Splay Trees] One feature of splaying versus the simple move to root heuristic is that in performing a splay operation (i.e. performing the appropriate splay operations to move a node to the root), no node has its depth increased by more than 2. Prove this.

2. [6 marks: Close to 2-Sat] Suppose you have a Boolean formula in CNF (conjunctive normal form) with n variables and also n clauses. However lg n clauses have three literals (variables or their negations) and the remaining ones have just two. Sketch an efficient algorithm to determine whether the formula is satisfiable. [You may assume 2-Sat is solvable in linear time]