Name: _____

Pid: _____

Note that every statement in the homework should be proved.
The only exeptions are statements that were proven in previous homework or midterms and statements proven earlier in the class.

1. (10 points) Two players have two boards 8×8 and 9×9, one by one they put rooks on these boards such that none of the rooks attack each other (on each turn a player can put a rook on only one board). Who is the winner in this game.

2. Compute the Grundy function for states of the subtraction game with two piles of chips where players may subtract 1, 2 or 5 chips from one of the piles on their turn.

3. Let G_1 be the subtraction game where on their turn a player may remove 1 or 2 coins, and where there are 10 coins initially. Let G_2 be the game of Nim with three piles, of sizes 1, 6, 7. List all winning moves in $G_1 + G_2$