CS 4810 Homework Assignment 11 due Friday class Nov 22

Please place your net ID in upper right corner of your homework. This week's homework will be graded on the neatness of your work

1. Give a careful proof that determining if an arbitrary context-free grammar generates a regular set is undecidable.

2. Give a careful proof that determining if the complement of the set generated by an arbitrary context-free grammar is a context-free language is undecidable

3. Give a careful proof of Rice's theorem that every non-trivial property of the recursively enumerable sets is undecidable.

4. Give a short intuitive explanation of the proof of Cook's theorem that 3-CNF is NP-complete.

5. Give a polynomial time algorithm for determining if a 2-CNF formula is satisfiable.