CS 4810 Homework Assignment 7 due Friday class Oct 18

Please place your net ID in upper right corner of your homework

1. Minimize the following automaton

	0	1
$\rightarrow A$	B	F
B	C	G
C	D	D
D	E	D
E	E	D
F	G	F
G	G	F

   A is the start state and $C, D,$ and E are the final states.

2. Construct two context-free grammars G_1 and G_2 such that

$$L(G_1) \cap L(G_2) = \{1010^2 10^3 10^6 10^7 10^{14} \cdots 10^{2(2^n-1)} | n \geq 1\}$$

   The last block of 0's has an even number of 0's.

3. Write a context-free grammar for the complement of $L = \{\underbrace{10^n 10^n 1 \cdots 10^n 1}_{n}\}$

4. Clearly explain how to solve the prblem of erasing the current state when erasing the top stack symbol on the stack when converting a many state pda to a single state pda by recording the current state with the top stack symbol.

5. Prove $\{a^i b^j c^k | i < j < k\}$ not a context-free language.