

Cpt S 317 Homework #8

Please print your name!

1. Describe the language generated by the following grammar G :
 $S \rightarrow 0S|S1|0|1$.
2. Describe the language generated by the following grammar G :
 $S \rightarrow S0|S1|\Lambda$.
3. Describe the language generated by the following grammar G :
 $S \rightarrow 0S11|\Lambda$.
4. Give a context-free grammar that generates regular language $(1 + 0)^*10$.
5. Give a context-free grammar that generates language
 $\{0^{3n}1^{2n}0^m1^m : n \geq 1, m \geq 1\}$.
6. Give a context-free grammar that generates language $\{0^n1^m : n > 2m\}$.
7. Give a context-free grammar that generates language $\{0^n1^m : n < 2m\}$.
8. Give a context-free grammar that generates language $\{0^n1^m : n \neq 2m\}$.
9. Eliminate Λ -productions from the following context-free grammar:
 $S \rightarrow ASB|AB|ab$
 $A \rightarrow AS|a|\Lambda$
 $B \rightarrow SB|A|b$
10. Eliminate unit productions from the following context-free grammar:
 $S \rightarrow B|SB|ab$
 $A \rightarrow a|SA$
 $B \rightarrow A|SB|b$
11. Transform the following grammar into CNF (Chomsky normal form):
 $S \rightarrow AbBaS|ASB|AB|ab$
 $A \rightarrow bB|a$
 $B \rightarrow SBb|b$