CS 81 Logic and Computability

Fall 2007

HW 8 due 11/20/07

1. Consider the language $L=\{a^n b^{2n} \mid n \geq 0\}$.
   a. Give a context-free grammar for L.
   b. Prove your grammar is correct.
   c. Give a derivation of the string aabbbb.
   d. Draw the corresponding derivation tree.

2. Repeat problem 1 for the language $L=\{a^n b^m c^{n+m} \mid n,m>0\}$ and the string abbccc.

3. Repeat problem 1 for the language $L=\{x \mid x=x^R\}$ over {a,b} and the string aababaa.

3. A context free grammar is said to be strongly right-linear if every production has the form $A \rightarrow aB$ or $A \rightarrow \varepsilon$. Prove that if G is right-linear then L(G) is regular.