Problem Set 4 — Due Thursday, February 13, 1997

Problem 1. Prove that the context free languages are closed under reversal: if L is context free, so is L^R.

Problem 2. Prove that the following languages are not context free.

Part A. $L_a = \{b_i\#b_{i+1} : b_i \text{ is } i \text{ in binary}, i \geq 1\}$

Part B. $L_b = \{ww^Rw : w \in \{a,b\}^*$

Problem 3. Page 121, Exercise 2.14.

Problem 4. Page 121, Problem 2.19.