Problem Set 5 — Due Monday, February 22, 1999

Problem 1. (Delayed from Problem Set 4.)

a. Prove that $L_a = \{a^i b^j c^k : j = \max\{i, k\}\}$ is not context free.

b. Prove that $L_b = \{b_i \# b_{i+1} : b_i \text{ is } i \text{ in binary}, i \geq 1\}$ is not context free.

Problem 2. Page 122, Problem 2.26.

Problem 3. Page 169, Problem 4.12.

Problem 4. Page 148, Exercise 3.5.

Problem 5. Page 148, Exercise 3.8 (a).

Problem 6. Page 148, Problem 3.10.