

CSE625: Introduction to Formal Languages – Homework 6

Due: May 20, 2008 (Wed) in class. No late homework is accepted.

**Note:** The TA might only grade a subset of the homeworks.

**Problem 1:** [40 pts] Exercise 6.9 in the textbook.

**Problem 2:** [10 pts] Find context-free grammars generating each of the following languages.

(a)  $\{a^{3i}b^i \mid i \geq 2\}$ .

(b)  $\{a^i b^j \mid 3j \geq i \geq 2j \geq 0\}$  (Hint: for each  $b$  generate two or three  $a$ 's. )

**Problem 3:** [12 pts] Exercise 6.10 in the textbook.

**Problem 4:** [6 pts] Give the regular grammar for the following regular language:

$$\{s \in a, b, c \mid \text{the number of } c \text{ is odd}\}.$$