

CSCI 2400 – Models of Computation

Homework 8

Due: Thursday March 25 in class

**Problem 1.** Show that the following language is not context-free:

$$L = \{a^n b^j c^k : k = 2jn, k, j, n \geq 0\}$$

**Problem 2.** Show that the following language is not context-free:

$$L = \{w : w \in \{a, b, c\}^*, n_a(w) = n_b(w) * n_c(w)\}$$

**Problem 3.** Is the following language context-free? Prove your answer.

$$L = \{ww^R w^R w : w \in \{a, b\}^*\}$$