

Review 23

Automata & Theory of Computation

Student ID:

Name:

1. Show that the following language L is not context-free.

(1) $L = \{a^n b^n c^n : n \geq 0\}.$

(2) $L = \{ww : w \in \{a, b\}^*\}.$

$$(3) \quad L = \{a^{n!} : n \geq 0\}.$$

$$(4) \quad L = \{a^n b^j : n = j^2\}.$$