

CSE355 Fall 2016–Recitation Quiz 9

Name: _____ ASU ID: _____

Monday 9:40AM Monday 10:45AM Tuesday 7:30AM Tuesday 4:35PM Wednesday 9:40AM

Wednesday 10:45AM Thursday 7:30AM Thursday 4:35PM Friday 9:40AM Friday 10:45AM

1. Show that $L = \{ww : w \in \{0, 1\}^*\}$ is not context-free (Hint: try each half of the string being 0^p1^p).

2. State True or False for each. If you say True, give a very brief explanation as to why it is true. If you say False, give a single counterexample.

(a) The union of any CFL and a regular language is also a CFL.

(b) The intersection of two CFLs, which both have *unambiguous* grammars, is a CFL.

(c) The language $L = \{w \in \{0, 1, 2\}^* : \text{the number of 0's in } w + \text{the number of 1's in } w = \text{the number of 2's in } w\}$ is a CFL (a short explanation is sufficient).

TA use only! Quiz has been recorded: