

CS 373: Theory of Computation, Fall 2008

Discussion 5

1. Recall the pumping lemma. Show that a^*b^* satisfies the pumping lemma.

2. Prove that the following are not regular languages
 - (a) The set of strings of balanced parentheses. These are the strings of characters "(" and ")" that can appear in a well formed arithmetic expression.
 - (b) $\{0^n \mid n \text{ is a perfect square}\}$.
 - (c) The set of strings of 0's and 1's that are of the form ww^R , that is the string followed by its reverse.