

# CSC544 Assignment #8

due Tuesday 4/21 in class

version 1.0

## Problems

1. Show that for any function  $f: \mathbb{N} \rightarrow \mathbb{R}^+$ , where  $f(n) \geq n$ , the space complexity class  $SPACE(f(n))$  is the same whether you define the class by using a single-tape machine or a two-tape read-only input tape machine.
2. Let  $EQ_{REG} = \{\langle R, S \rangle \mid R \text{ and } S \text{ are equivalent regular expressions}\}$ . Show that  $EQ_{REG} \in PSPACE$ .