CSCI 2400 – Models of Computation

Homework 9
Due: Thursday April 1 in class

Problem 1. Draw a Turing machine that accepts the following language:

$$L = \{vv : \quad v \in \{a, b\}^+\}$$

Problem 2. Draw a Turing machine that computes the following function for any integers $x, y \geq 1$:
$$f(x) = 3x + 2y$$

Problem 3. Consider a variation of Turing machines, called *2-3-machines*, in which the head is allowed to move either 2 or 3 positions to left or right. Show that the class of 2-3-machines is equivalent with the standard Turing Machines.