

Homework 5 (TM)

Due Friday, March 30, 07 at 3:00 PM in Class

Note: I may not grade all assignments and I may grade only selected problems of the assignment I decide to grade.

- (1) Construct STDs for TMs that recognize the following languages:
 - (a) $L = \{a^n b^{2n} \mid n \geq 0\}$.
 - (b) $L = \{a^n b^n a^n \mid n \geq 0\}$.
 - (c) $L = \{xx^R \mid x \in \{a, b\}^*\}$.
- (2) Is it possible to reduce the number of states of the TM that recognizes

$$L = \{x \in \{a, b\}^* \mid x \text{ is a palindrome}\},$$

that we drew in class? Explain.

Note: Next homework is on two-tape TM.