

Complexity Theory Homework №1

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Exercise 1.3

Exercise 1.4

Exercise 1.5

Exercise 1.6

Exercise 1.7

Exercise 1.8

1.

$\Sigma = \{a, b, c\}$, replaces a to b

$$q_0 b q_0 b R$$

$$q_0 c q_0 c R$$

$$q_0 a q_a b R$$

$$q_0 q_{Accept} S$$

$$q_a a q_{1a} b R$$

$$q_a b q_{1b} b R$$

$$q_a c q_{1c} b R$$

$$q_a q_{Accept} b R$$

$$q_{1a} a q_{1a} a R$$

$$q_{1a} b q_{1b} a R$$

$$q_{1a} c q_{1c} a R$$

$$q_{1a} q_r a R$$

$$q_{1b} a q_{1a} b R$$

$$q_{1b} b q_{1b} b R$$

$$q_{1b} c q_{1c} b R$$

$$q_{1b} q_r b L$$

$$q_{1c} a q_{1a} c R$$

$$q_{1c} b q_{1b} c R$$

$$q_{1c} c q_{1c} c R$$

$$q_{1c} q_r c L$$

$$q_r \cdot q_r \cdot L$$

$$q_r q_0 L$$