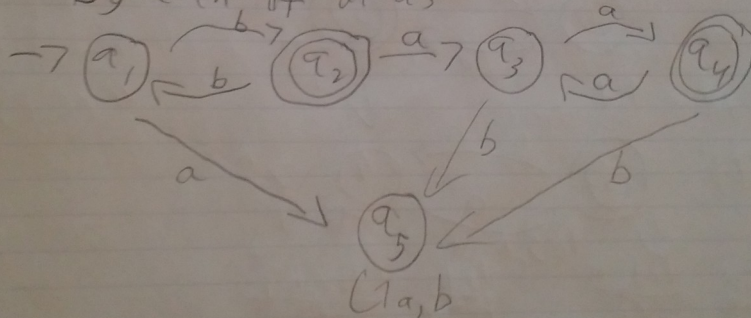
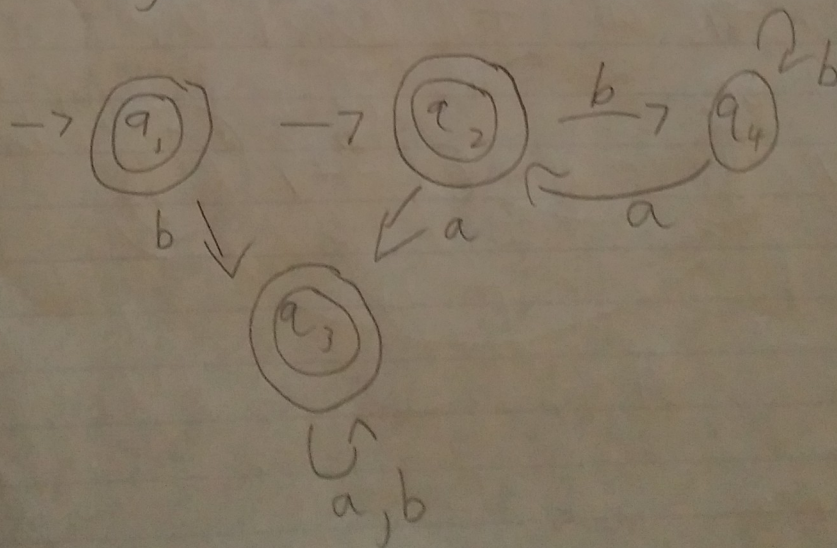
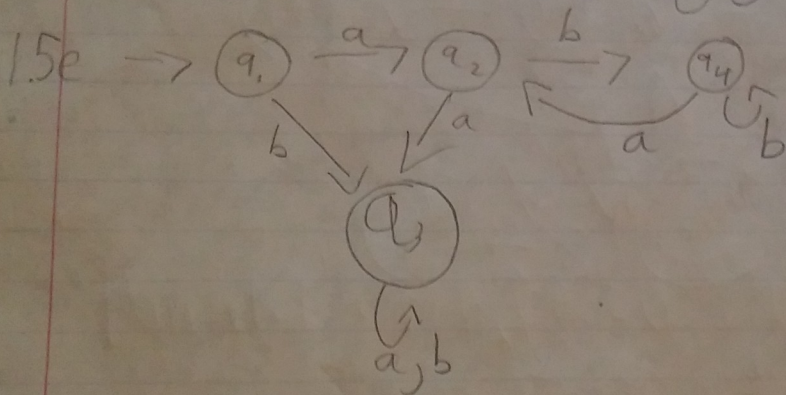
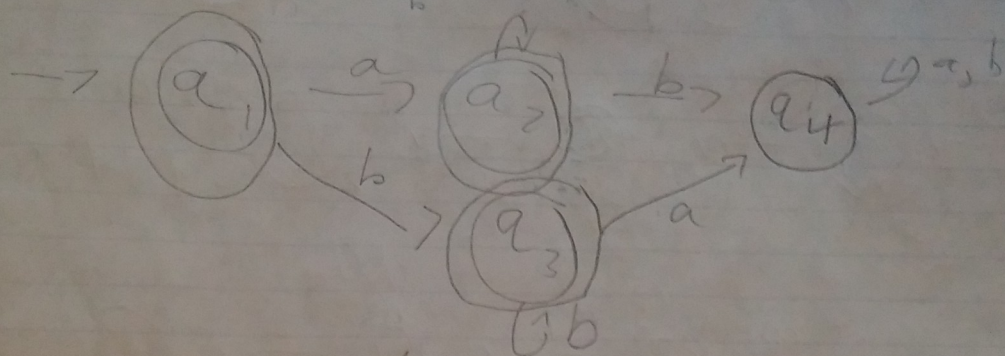
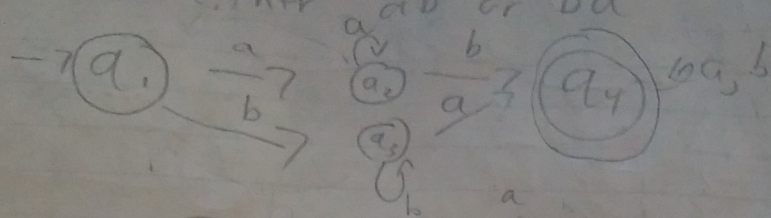


1.12 $D = \{w \mid w \text{ contains an even \# of } a\text{'s and an odd \# of } b\text{'s and does not contain the substring } abb\}$ - odd # of b's followed by even # of a's

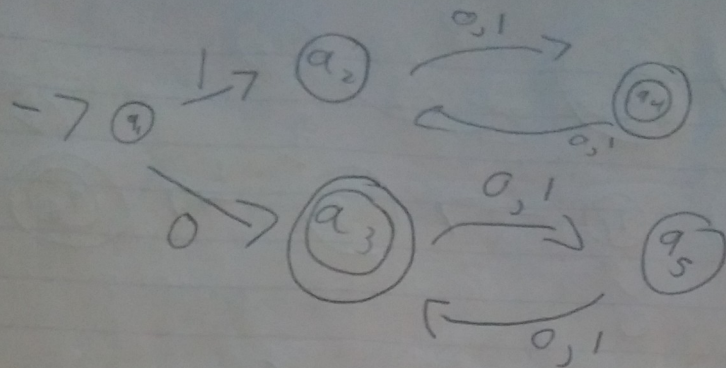


$D = \{w \mid w \text{ contains odd \# of } b\text{'s}\}$
 $D' = \{w \mid w \text{ contains even \# of } a\text{'s}\}$
 $D = b \cup D'$
 $R = R_1 \cup R_2$
 $R_1 = b(bb)^*$
 $R_2 = (aa)^*$
 $R_3 = b(bb)^*(aa)^*$

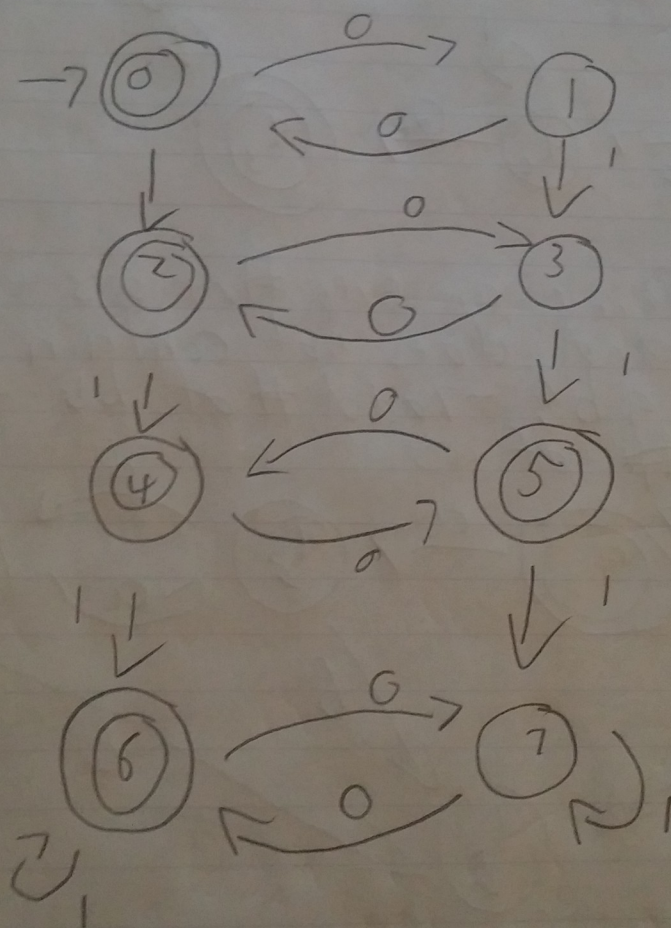
1.5c Contains either ab or ba



1.6e



1.61



John Spicer

I pledge my honor that I have abided by the Stevens honor system.

1.18 c. Language: $\{w/w \text{ contains substring } 0101\}$
over $\Sigma = \{0, 1\}$
 $R = \Sigma^* 0101 \Sigma^*$

e. Language: $\{w/w \text{ starts with } 0 \text{ and has odd length, or starts w/ } 1 \text{ and has even length}\}$
over $\Sigma = \{0, 1\}$
 $R = (0 \cup 1 \Sigma) \cup (1 \cup 0 \Sigma \Sigma \Sigma)^*$

1. Language: $\{w/w \text{ contains an even \# of } 0's \text{ or exactly two } 1's\}$ over $\Sigma = \{0, 1\}$
 $R = (1^* (01^* 01^*)^* \cup 0^* 10^* 10^*)^*$

