#1

Find a regular expression for the language

$L = \{ w \in (0,1)^* : w \text{ has no pair of consecutive 0's} \}$.
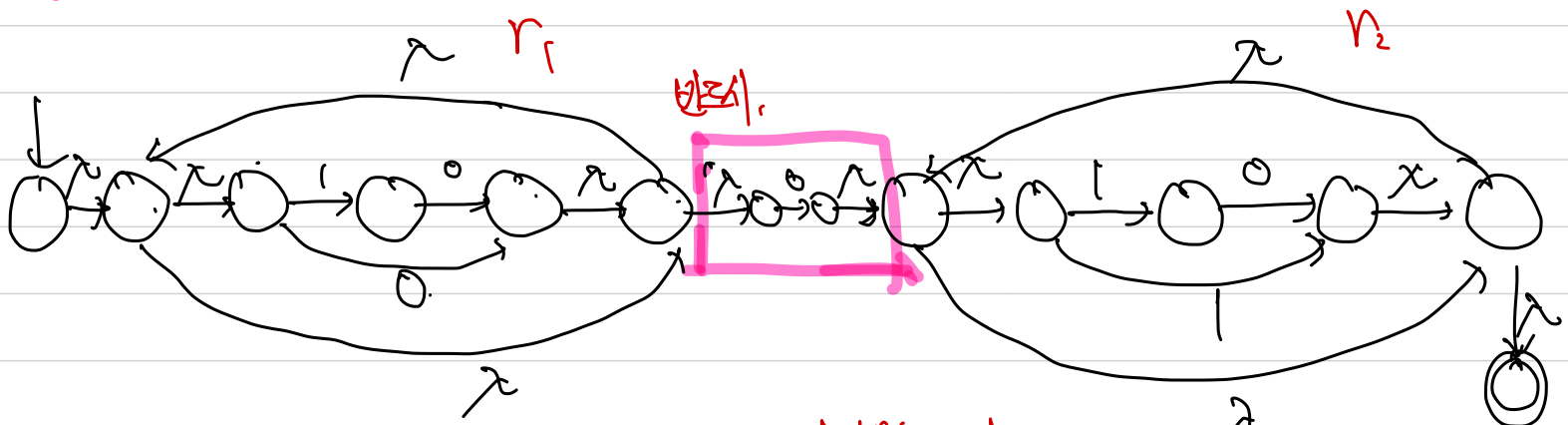
$$\text{연속한 } 0 \text{ 이 } x.$$

$$r = (1 + 01)^* (0 + \lambda)$$

#2.

Find all strings in $L(\underbrace{(10+0)}_{r_1}^* \ 0 \ \underbrace{(1+10)^*}_{r_2})$ of <u>length less than</u>

four.

↑ 미만.

r_1 r_2 비로시. n_2

r_1번 이 1번 r_1번 + r_1번 이 1번   총 2번.

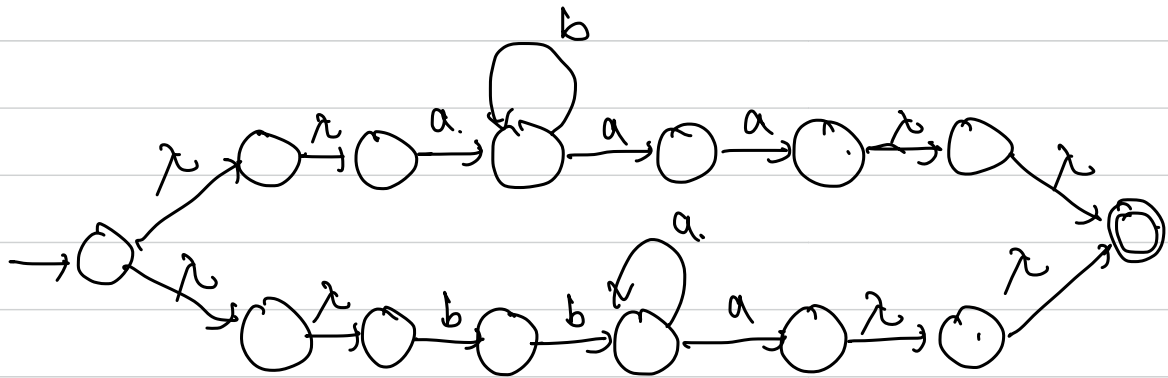| $|\angle| 1$	0	1	2	3
	X	0	00 00 0 1	1 0 0 0 0 1 0 1 0

$\angle = \{ 0, 00, 01, 100, 001, 010 \}$
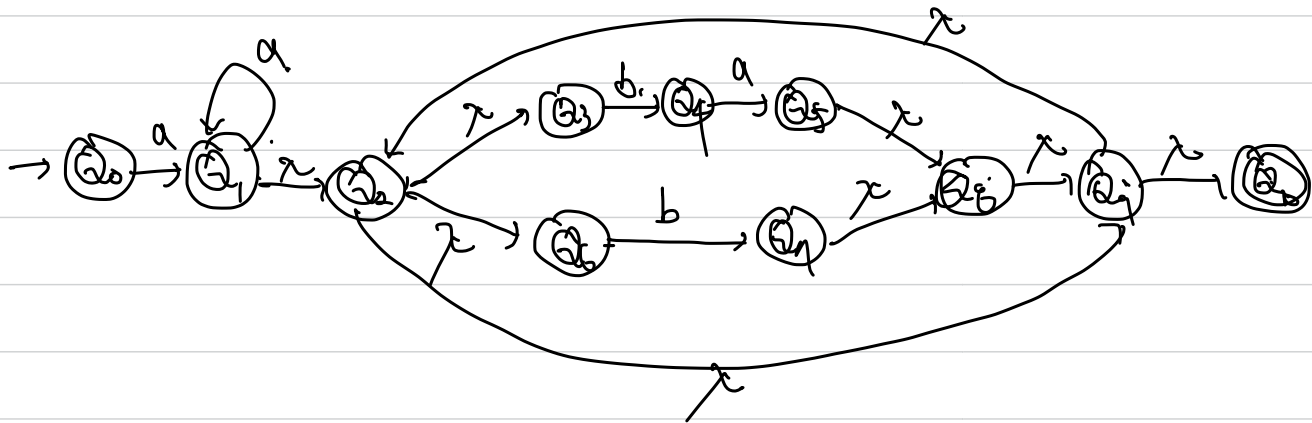
#3.

Use the construction in <u>Theorem</u> 3.1 to find an
<u>nfa</u> that accepts the language $L(\underbrace{ab^*aa}_{r_1} + \underbrace{bba^*a}_{r_2})$

#4.

Find a <u>regular grammar</u> that generates the language.

$$L(aa^*(ba+b)^*)$$

$P: Q_0 \to aQ_1, \quad Q_1 \to aQ_1, \quad Q_3 \to bQ_4, \quad Q_4 \to aQ_5,$

$Q_6 \to bQ_n,$

$G = (\{Q_0, Q_1, Q_3, Q_4, Q_5, Q_6, Q_n\}, \{a, b\}, Q_0, P)$