A. $\Sigma = \{0, 1\}$ 일 때, 다음 언어를 인식하는 PDA의 state diagram을 그리시오.
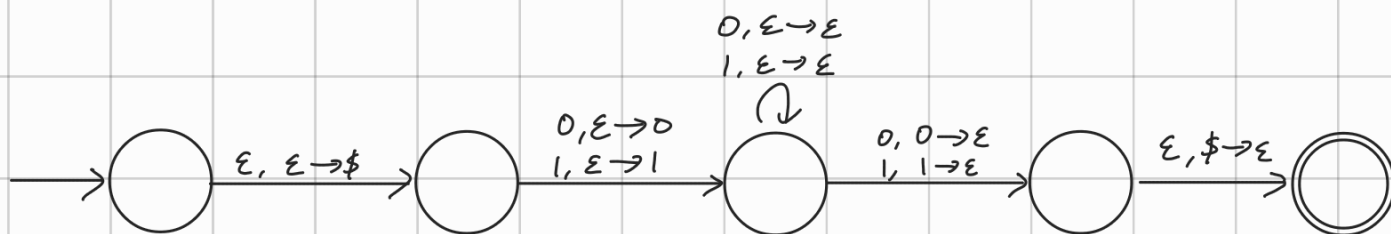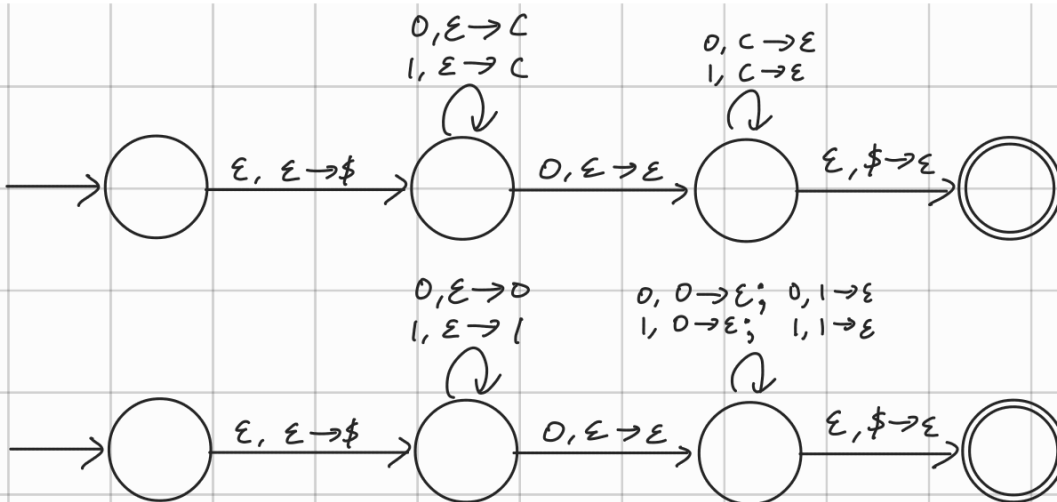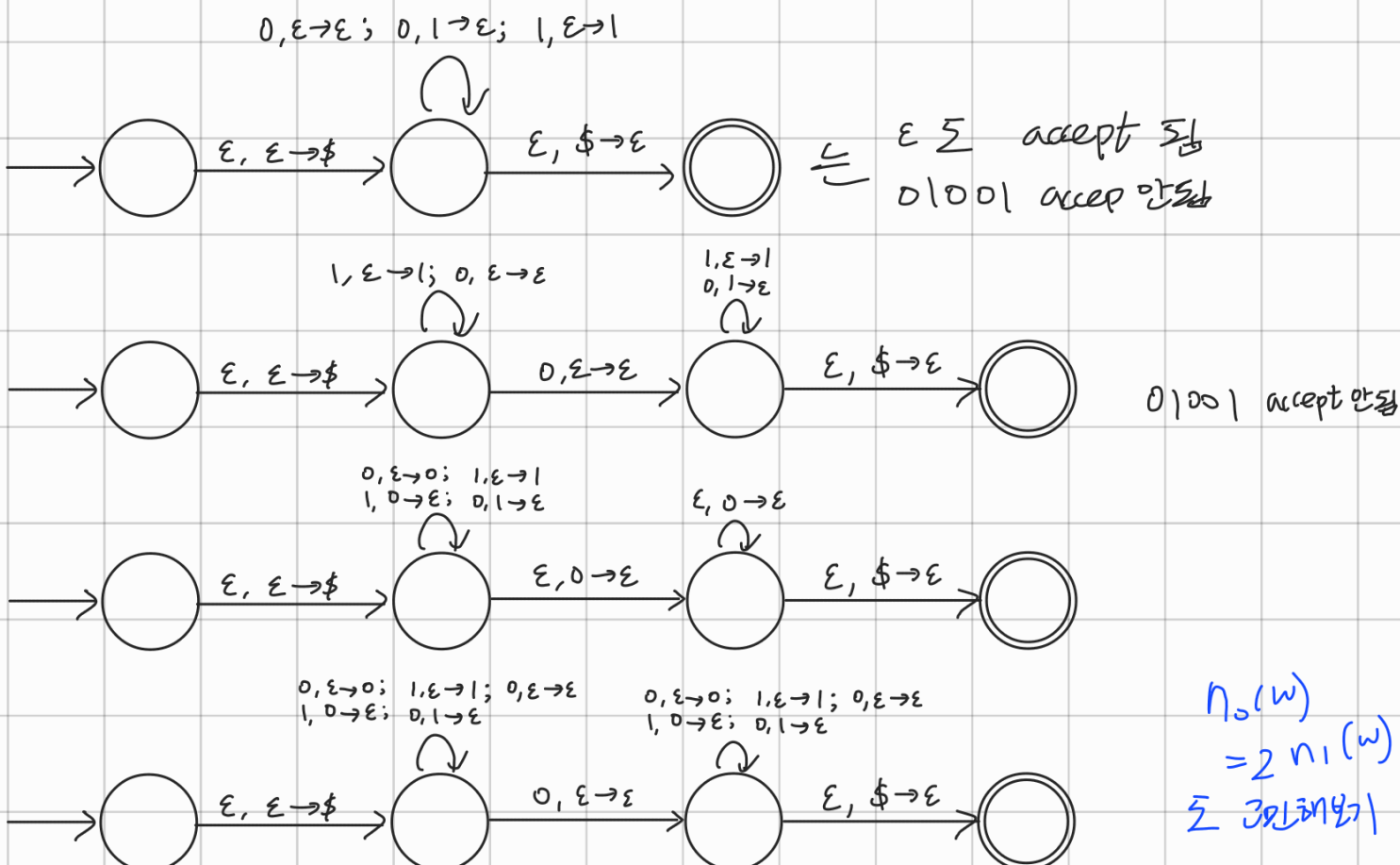
A.1 { w starts and ends with the same symbol. }

A.2 { $|w|$ is odd and the middle symbol is a 0. }

※ C 는 토큰

A.3 { $n_0(w) > n_1(w)$ }

는 $\varepsilon \, \leq$ accept 됨
01001 accep 안됨

01001 accept 안됨

$n_0(w)$
$= 2 n_1(w)$
로 고민해보기

A.4 $\{ w\sharp x : w^R$ is a substring of x for $w, x \in \{0,1\}^*. \}$

B. $\Sigma = \{a, b\}$ 일 때, 강의자료 p.5를 참고하여 다음 질문에 답하시오.

B.1 CFG G와 동등한 PDA M의 state diagram을 그리시오. (즉, $L(M) = L(G)$)

$$G = (\{S\}, \{a, b\}, \{S \to aSb \,|\, SS \,|\, \varepsilon \}, S)$$

B.2 Visualize all steps of the stack of M (Lec20의 29분~ 35분 참고) when input string is `aababb`.

① $a, a \to \varepsilon$ ③ $\varepsilon, S \to aSb$ ⑤ $\varepsilon, S \to \varepsilon$

② $b, b \to \varepsilon$ ④ $\varepsilon, S \to SS$

$$S \Rightarrow aSb \Rightarrow aSSb \Rightarrow aaSbSb \Rightarrow aabSb \Rightarrow aabaSbb \Rightarrow aababb$$