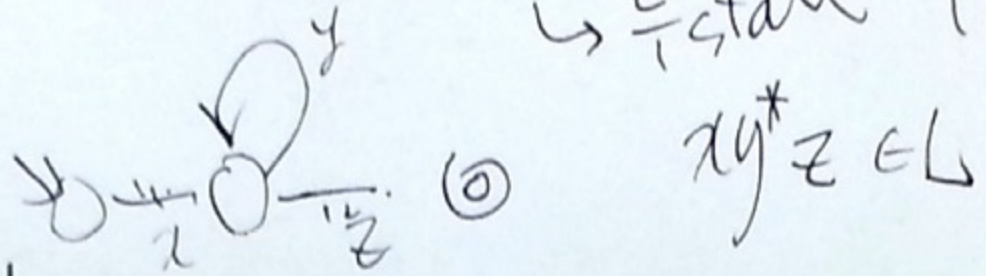


17강 11/11 (W) CYK alg.  
Pumping Lemma for CFG

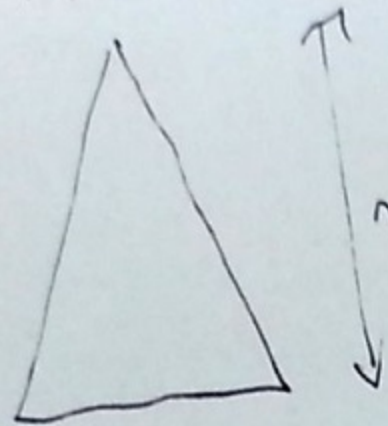
Pumping lemma for R.L.

finite state. - 자량이 길면 (state 가 너무 많으면)  
↳ finite state ... Pumping



Pumping lemma for CFL

$A \rightarrow BC \vee A \rightarrow a \in P, A, B, C \in N, a \in \Sigma$



자량이 길면 (어떤  $n$  이든  $n$  이 존재함)  
↳ Pumping

$uv^iwx^iy \in L \quad 0^n 1^n \dots \text{cfl}$   
 $\times 0^n 1^{2n} 2^n \dots \text{cfl?}$

CFG (Context-free grammar)  
 $A \rightarrow \alpha \in P, A \in N, \alpha \in (N \cup \Sigma)^*$

Context-sensitive grammar  
 $\beta_1 A \beta_2 \rightarrow \beta_1 \alpha \beta_2 \in P$  where  $A \in N, \alpha, \beta_1, \beta_2 \in (N \cup \Sigma)^*$

$A \rightarrow \alpha$   
 $\beta_1 \beta_2$

CYK-alg. Cocke, Younger, Kasami