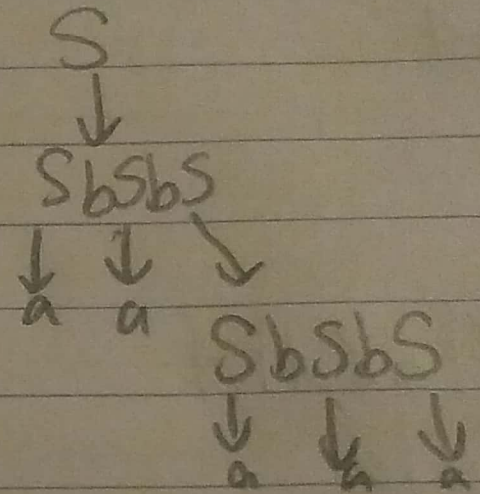
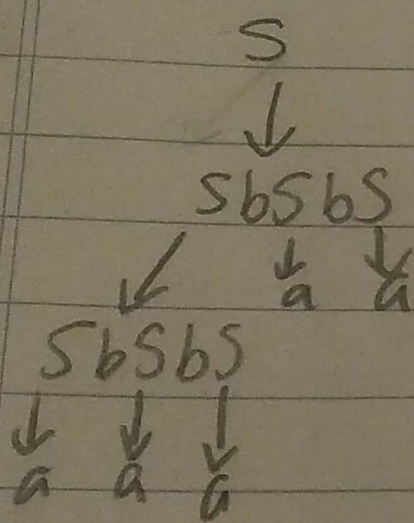


Assignment 6

Date

1. $S \rightarrow aXd$
 $X \rightarrow aXd \mid bYc \mid bc$
 $Y \rightarrow bYc \mid \Lambda$

2



3. $S \rightarrow aXa \mid bYa$
 $X \rightarrow aaX \mid Xaa \mid aXa \mid bX \mid Xb \mid \Lambda$
 $Y \rightarrow aaY \mid Yaa \mid aYa \mid bY \mid Yb \mid a$

4. $S \rightarrow aX \mid XbX$

$\emptyset \leftarrow b^k a$

$X \rightarrow \cancel{a} \mid \cancel{X} \mid \cancel{X} \mid \cancel{X} \mid \Lambda$

New:

$S \rightarrow a \mid aX \mid b \mid Xb \mid bX \mid bXb$

$X \rightarrow a \mid aX \mid Xa \mid XaX \mid b \mid Xb \mid bX \mid bXb$

S. a) $S \rightarrow WX$

$W \rightarrow aWb \mid X$

$X \rightarrow XY \mid Z$

$Y \rightarrow cY$

$Z \rightarrow dZd \mid d$

$W \Rightarrow X$

$W \Rightarrow X \Rightarrow Z$

$X \Rightarrow Z$

$W \Rightarrow X$

W, Z

X, Z

New:

$S \rightarrow WX$

$W \rightarrow aWb \mid XY \mid dZd \mid d$

$X \rightarrow XY \mid dZd \mid d$

$Y \rightarrow cY$

$Z \rightarrow dZd \mid d$

$Z \rightarrow dZdId$

b) $A \rightarrow a$

$B \rightarrow b$

$C \rightarrow c$

$D \rightarrow d$

$S \rightarrow WX$

$W \rightarrow AWB | XY | DZDId$

$X \rightarrow XY | DZDId$

$Y \rightarrow CY$

$Z \rightarrow DZDId$

CNF:

$A \rightarrow a$

$B \rightarrow b$

$C \rightarrow C$

$D \rightarrow d$

$S \rightarrow WX$

$W \rightarrow AR_1 | XY | DR_2 | d$

$R_1 \rightarrow WB$

$R_2 \rightarrow ZD$

$X \rightarrow XY | DR_3 | d$

$R_3 \rightarrow ZD$

$Y \rightarrow CY$

$Z \rightarrow DR_4 | d$

$R_4 \rightarrow ZD$