

Saad Kashif 21L-1789 6C

1	-luto	tion	9
		1	0

)	Assignmen	t.3
5	1132.	
3	$A)$ $3 \rightarrow TU \setminus V$	Adding New Start State
5	T->aTblE	2.2
×	$V \rightarrow CU \setminus E$	Some
)	V -> avc/w	Jold To G. T.
	3/Wd FW	
•		on Id Male New York
,	Removing NULL Production	2/1 x 1 V =- 12/
	: W -> E	7 V -> E
() () () () () () () () () () () () () (	$S_0 \longrightarrow S$	$S_0 \rightarrow S$
	$S \rightarrow TUV$	S->TU/V/E/T
	T-> aTb/E	T->aTblE
	U -> cU/E	U-> CU/C
Marian and a factor	V -> aVc/W/E	V -> aVc/W/ac
all consequences of the second	W -> bW/b	W-> bW/b
	,	
	: V→E	: T -> E
		in the second second
	$S_0 \longrightarrow S$	$S_0 \rightarrow S$
	3 -> TU/V/E	$S \rightarrow TU/V/E/T/U$
	T-) aTb/E	T->aTb/ab
	$V \rightarrow CU/E$	$U \rightarrow CU/C$
Phy South and	$V \rightarrow aVc/W/ac$	V -> aVC/W/ac
	W -> bW/b	W-7 by 16
	the second secon	A CONTROL OF THE PARTY OF THE P





## Removing Unit Production : V -> W

$$\begin{array}{c} S_0 \rightarrow S \\ S \rightarrow TUIVIEITIUIE \\ T \rightarrow aTblab \\ II \rightarrow aUII \end{array}$$

$$= 3 \rightarrow V$$





Replacing Terminal Non Terminal	with new variables
Thought the second	
$y_1 = C$ $y_2 = qV$ $y_3 =$	a 24 = 6
$xs = \alpha T$	15 - 17-17 14-8
70 - 01	3 2 2
So -> E/TU/ M2/1/ M3/1/ M5/14/	213×4 ×4W/6/21U/C
$S \rightarrow TU \mid \chi_2\chi_1 \mid \chi_3\chi_1 \mid \chi_5\chi_4 \mid \chi$	324/24W/b/21U/C
T -> 215 214 \ 213 214	
U → ZIU LEC	Z Y .
$V \rightarrow 2221 / 2231 / 24W/b$	
W-> 24W/b	
The state of the s	1 5/ 2 5/ 19A 4-1
	9/9 4 4
B) 3 -> ASA lab	Adding New Stert
$A \rightarrow B1S$	State
B -> B / E	Som S
$X \rightarrow A$	<u>. 0)                                   </u>
Removing NULL Production	
B -> E	
$S_0 \longrightarrow S$	48 - 11
3-> ASA /aB/a	
A -> B/S/6	A · Minimum
B > \$ b'	
$\mathcal{N} \longrightarrow \mathcal{A}$	





## -: A -> E

$$\frac{S_0 \longrightarrow S}{S \longrightarrow ASA \mid aB \mid a \mid SA \mid AS \mid S}$$

A -> 8/3

B -> b

3/A (- X

A -> B13

BAb

 $X \longrightarrow A$ 

## Removing Unit Production

$$:S \longrightarrow S$$

$$\sim 30 \rightarrow 5$$





	So -> ASA laBla 18A 1AS
5	S-> ASAlaBla/SALAS
5	A -> 6/ASA/aB/a/SA/AS
7	$B \rightarrow b$
7	Replacing terms with more than 2 terminals or
9	non terminals.
5	$(X \longrightarrow AS)$
5	80 -> XA/VB/a/8A/A8 [Y->a]
3	S-> XA/YB/a/SA/AS
3	A -> b/A/XA/YB/a/SA/AS
7	$\beta \rightarrow b$
3	
<b>.</b>	
7,	C) S -> a/aA/aB Adding New Start
	A -> aBB/E State
	$B \rightarrow Aa / b$ $80 \rightarrow S$
3)	Removing NULL Production
•	Removing NULL Production
•	
•	$S_0 \rightarrow S$
	$3 \rightarrow \alpha / \alpha A / \alpha B$
2	A -> aBB=
•	$B \rightarrow Aabba$





Removing Duplicate	ş ()
	$\langle x \rangle \times \rightarrow a$
So -> a/XA/XB	Y-aB
A -> YB	1.7
$B \rightarrow A \times 1 h la$	