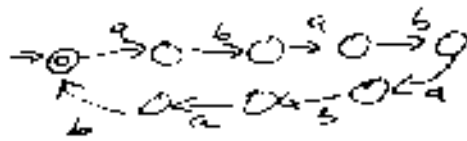


1.  $(ab)^{44} (ab)^{44} = (ab)^{88}$  which

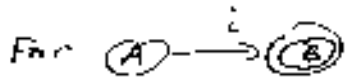
is obviously regular:



2. Let  $M$  be a d.f.s.a.



$G$  contains  $A \rightarrow iB$



$G$  contains  $A \rightarrow i$

(a) For all final states  $B$ ,  
 $G$  contains  $A \rightarrow iB/i$

$\text{First}(iB) \cap \text{First}(i) = \{i\}$  so  $\notin LL(1)$ .

(b)  $G$  is  $SLR(1)$  -

From states:

$A \rightarrow iB$

$A \rightarrow i$

Next state can only be

$A \rightarrow iB$

$A \rightarrow i$

This is inadequate so NOT  $SLR(1)$ . BUT

Follow ~~state~~ (A) can

only be  $i$  and

$\text{First}(B) \cap i = \emptyset$  so

$SLR(1)$ .

3.  $S \rightarrow (XSS) \mid (XS) \mid b$

(b) - NOT  $LL(1)$  -

$\text{First}((XSS)) =$

$\text{First}((XS)) = \{($

(a)  $SLR(1)$

$S \rightarrow (XSS)$	$($	$S_1$
$S \rightarrow (XS)$	$($	$S_2$
$S \rightarrow a$		
$S_1$ $S \rightarrow (XSS)$	$X$	$S_3$
$S \rightarrow (XS)$	$b$	$S_4$
$X \rightarrow a$		
$S_2$ $S \rightarrow a$		Reduce
$S_3$ $S \rightarrow (XSS)$	$S$	$S_5$
$S \rightarrow (XS)$	$($	$S_1$
$S \rightarrow (XSS)$	$a$	$S_7$
$S \rightarrow (XS)$		
$S \rightarrow a$		
$S_4$ $X \rightarrow b$		Reduce
$S_5$ $S \rightarrow (XSS)$	$S$	$S_6$
$S \rightarrow (XS)$	$)$	$S_7$
$S \rightarrow (XSS)$	$($	$S_1$
$S \rightarrow (XS)$	$a$	$S_2$
$S \rightarrow a$		
$S_6$ $S \rightarrow (XSS)$	$($	$S_8$
$S_7$ $S \rightarrow (XS)$		Reduce
$S_8$ $S \rightarrow (XSS)$		Reduce

so  $SLR(1)$ , therefore  $SLR(1)$ .

4(a)

1000	1000	A	END STATE
$\rightarrow$			Dyn Link
1001	2		RA
1000	3		DISPLAY
1	4		X
2	1005		Y
1012	6	B	END STATE
1000	7		Dyn Link
$\rightarrow$	8		RA
1000	9		DISPLAY
1006	10	10	" 10
?	11		Y
1018	12	C	END STATE
1006	13		Dyn Link
$\rightarrow$	14		RA
1000	10	15	DISPLAY
1012	16		DISPLAY
3	17		Z

(b) LOAD N, P 3 (DISPLAY 20)  
LOAD M, N, 4 K  
ADD M, N, 5 1/2 (K+7)  
STORE M, P, 5 Z