3.6 a.

	nullable	First	Follow
S	False	{u}	
B	False	{w}	{y, x, z, v}
D	True	{y, x}	{z}
E	True	{y}	{x, z}
F	True	{x}	{z}

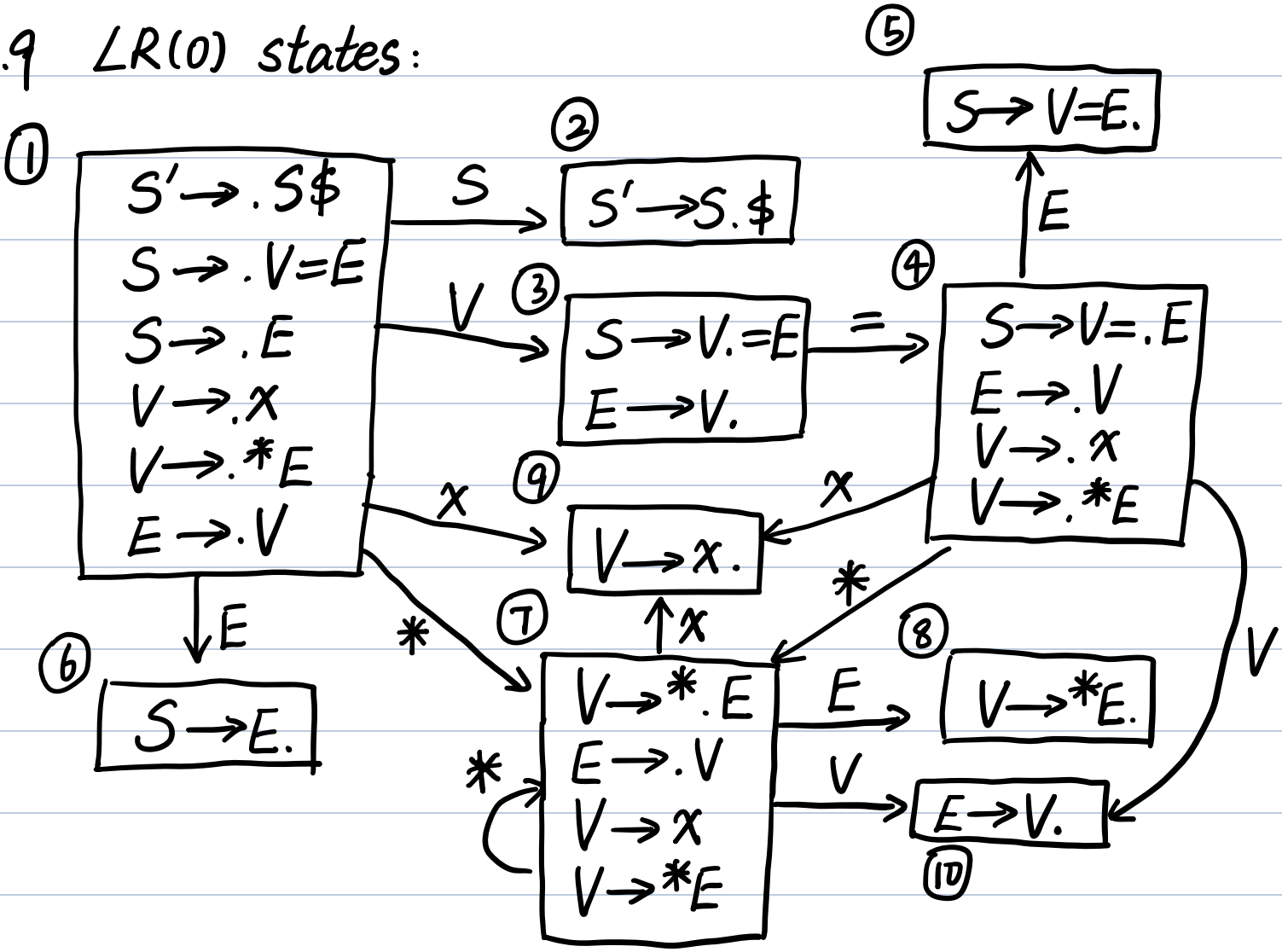
b.

	x	y	z	u	v	w
S				S→uBDz		
B						B→w B→Bv
D	D→EF	D→EF	D→EF			
E	E→	E→y	E→			
F	F→x		F→			

c. There exists a box containing more than one rules in parsing table.

d. $B \to w$, $B \to Bv$ $\Rightarrow$ $B \to wB'$, $B' \to vB'$, $B' \to$

3.9 LR(0) states:



Follow(S) = {$}
Follow(E) = {$, =}
Follow(V) = {=, $}

0 S'→S$
1 S→V=E
2 S→E
3 E→V
4 V→x
5 V→*E

∴ SLR parsing table:

	=	x	*	$	S	V	E
1		s9	s7		goto2	goto3	goto6
2				accept			
3	s4, r3						
4		s9	s7			goto10	goto5

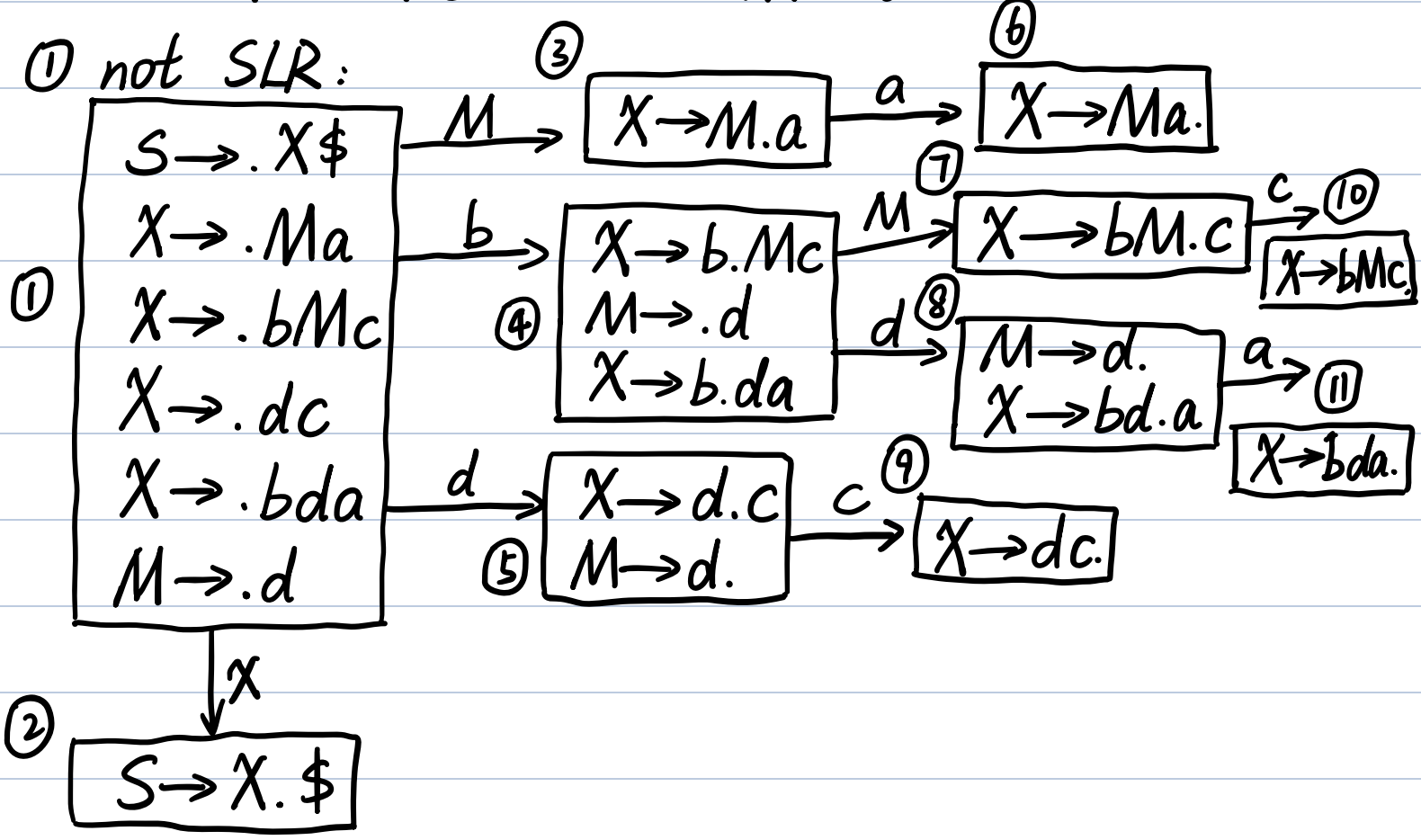
5		r1		
6		r2		
7	s9	s7	goto10	goto8
8	r5	r5		
9	r4	r4		
10	r3	r3		

In state 3 there exists a shift-reduce conflict.

3.13

0 $S \to X\$$
1 $X \to Ma$
2 $X \to bMc$
3 $X \to dc$
4 $X \to bda$
5 $M \to d$

① not SLR:



Follow(X) = {$}

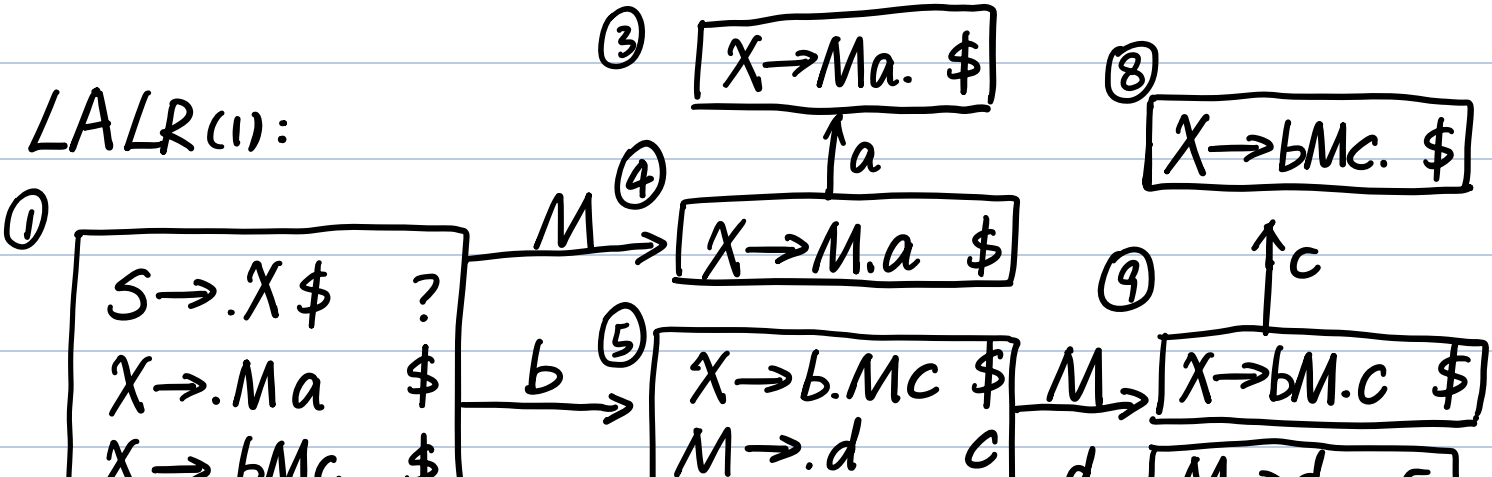
Follow(M) = {a, c}

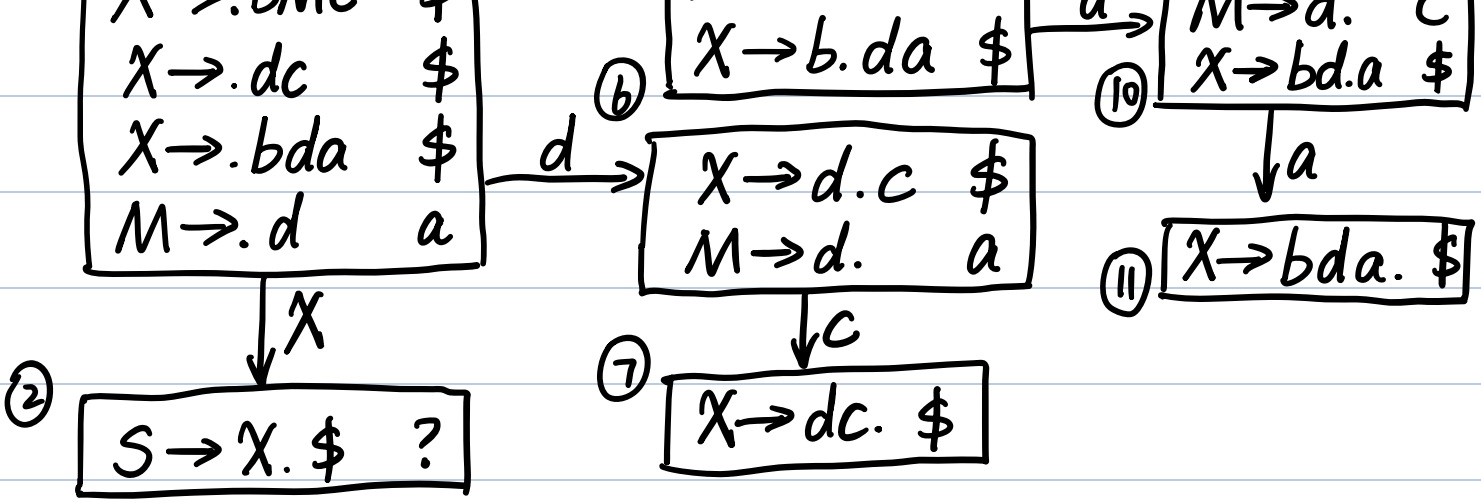
∴ SLR parsing table:

	a	b	c	d	$	X	M
1		S4		S5		goto2	goto3
2					accept		
3	S6						
4				S8			goto7
5	r5		r5 S9				
6					r1		
7			S10				
8	r5 S11		r5				
9					r3		
10					r2		
11					r4		

In state 5 and 8 there exist shift-reduce conflicts, so it's not SLR.

LALR(1):





LR(1) parsing table:

	a	b	c	d	$	X	M
1		s5		s6		goto2	goto4
2					accept		
3					r1		
4	s3						
5				s10			goto9
6	r5		s7				
7					r3		
8					r2		
9			s8				
10	s11		r5				
11					r4		

not conflict and no need to merge, so LALR(1) parsing table is the same and it's LALR(1).

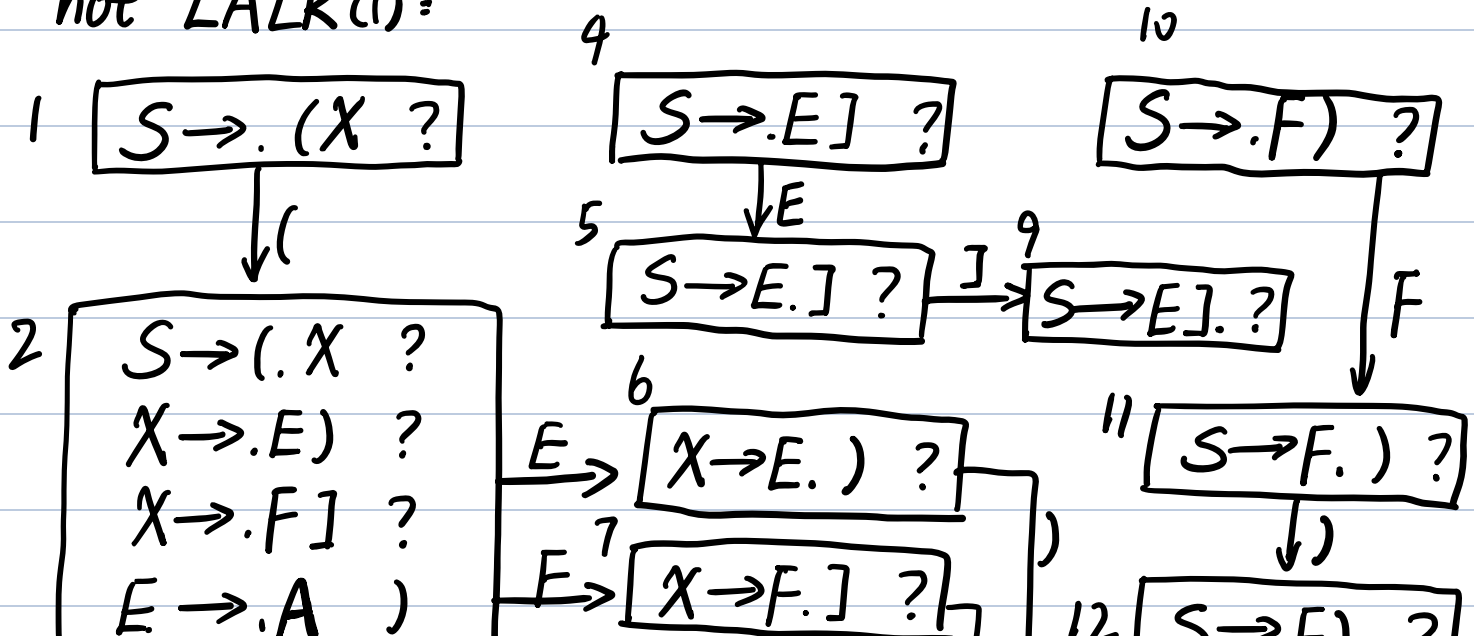
3.14 LL(1):

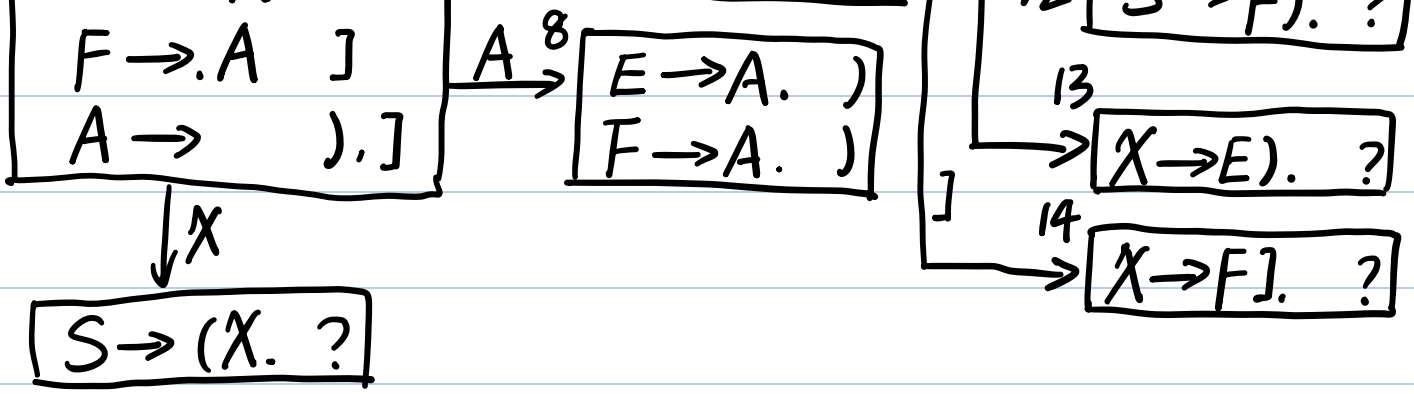
	nullable	First	Follow
S	False	{(,],)}	
X	False	{),]}	
E	True		{],)}
F	True		{),]}
A	True		{),]}

	(	]	)
S	S→(X	S→E]	S→F)
X		X→F]	X→E)
E		E→A	E→A
F		F→A	F→A
A		A→	A→

No box contains more than one rule, so it's LL(1).

not LALR(1):





LR(1) parsing table:

	(	)	]	X	E	F	A
1	s2						
2				goto3	goto6	goto7	goto8
3	r1	r1	r1	r1	r1	r1	r1
4					goto5		
5			s9				
6		s12					
7			s13				
8		r6 r7					
9	r2	r2	r2	r2	r2	r2	r2
10						goto11	
11		s12					
12	r3	r3	r3	r3	r3	r3	r3
13	r4	r4	r4	r4	r4	r4	r4
14	r5	r5	r5	r5	r5	r5	r5

We see a conflict in state 8, so it's not LALR(1).