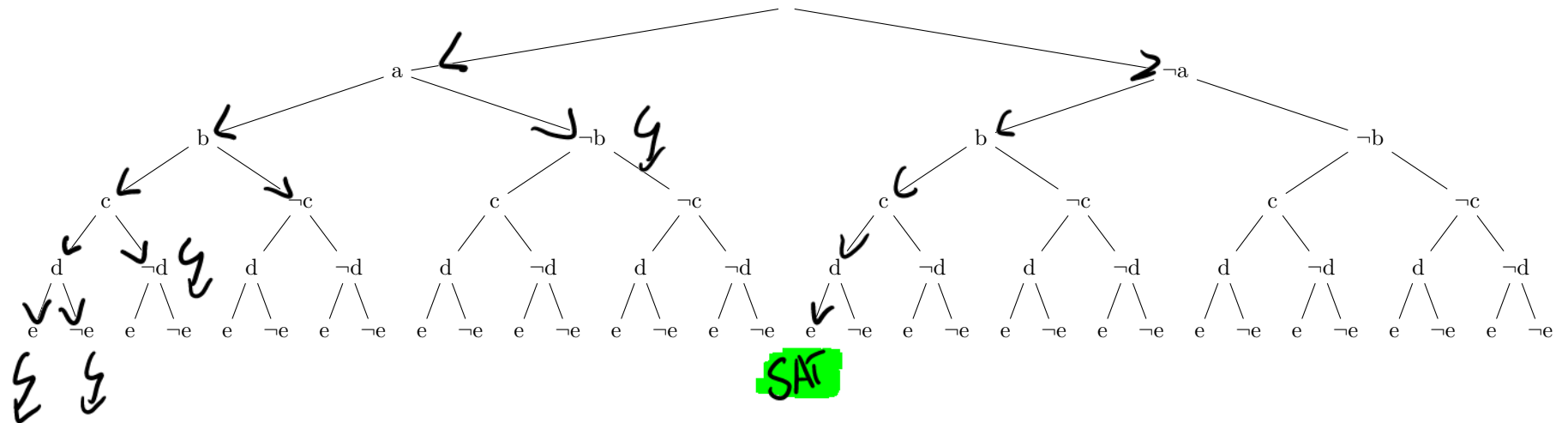
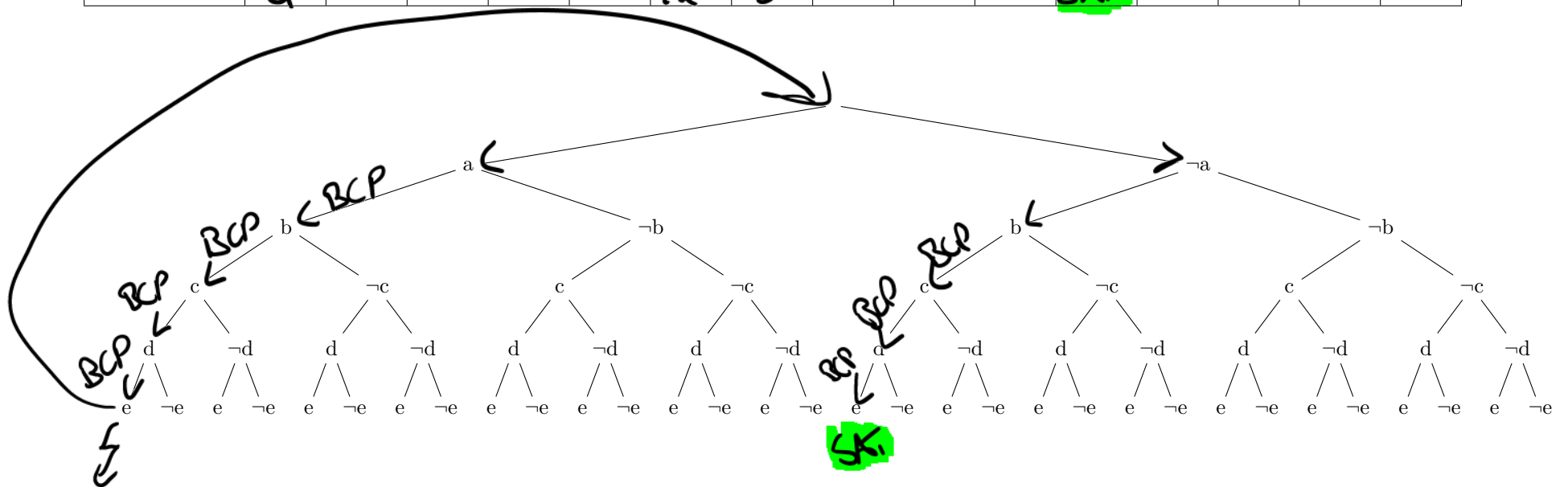


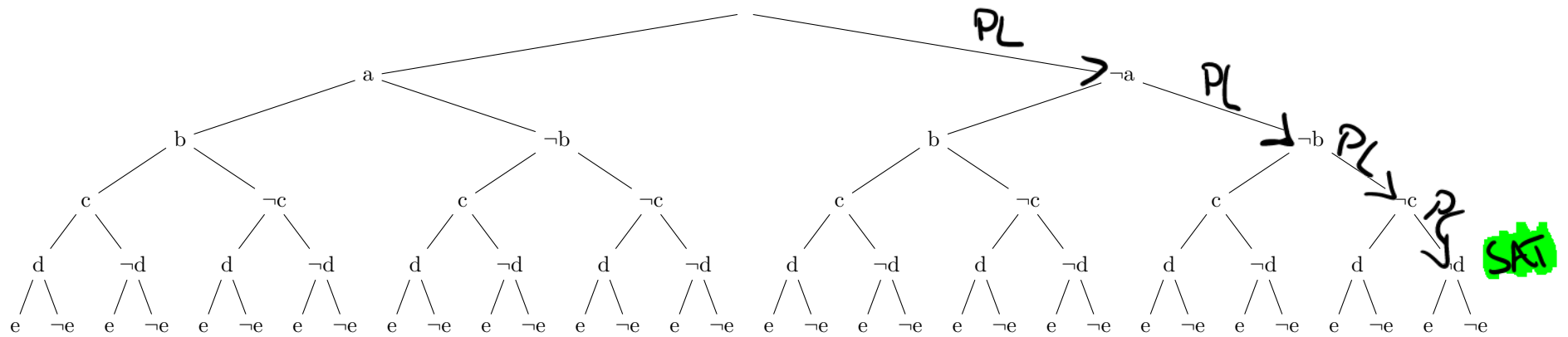
Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Decision Level	0	1	2	3	4	5	5	4	3	2	1	2	3	4	5
Assignment	$\emptyset$	a	ab	abc	abcd	abcde	abcd <del>e</del>	abc <del>d</del>	abc <del>d</del>	ab <del>c</del>	a <del>bc</del>	<del>a</del> b	<del>a</del> bc	<del>a</del> bcd	<del>a</del> bcd <del>e</del>
Cl. 1: $\neg a, b$	$\neg a b$	b	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\emptyset$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Cl. 2: $\neg b, c$	$\neg b c$	$\neg b c$	c	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\emptyset$	$\checkmark$	$\neg b c$	c	$\checkmark$	$\checkmark$	$\checkmark$
Cl. 3: $\neg c, d$	$\neg c d$	$\neg c d$	$\neg c d$	d	$\checkmark$	$\checkmark$	$\checkmark$	$\emptyset$	$\checkmark$	$\neg c d$	$\neg c d$	$\neg c d$	d	$\checkmark$	$\checkmark$
Cl. 4: $\neg d, e$	$\neg d e$	$\neg d e$	$\neg d e$	$\neg d e$	e	$\checkmark$	<del>e</del>	$\checkmark$	$\neg d e$	$\neg d e$	$\neg d e$	$\neg d e$	$\neg d e$	e	$\checkmark$
Cl. 5: $\neg e, \neg a$	$\neg e \neg a$	$\neg e$	$\neg e$	$\neg e$	$\neg e$	<del>e</del>	$\checkmark$	$\neg e$	$\neg e$	$\neg e$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Decision	a	b	c	d	e	$\neg e$	$\neg d$	$\neg c$	$\neg b$	$\neg a$	b	c	d	e	SAT



Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Decision Level	0	1	1	1	1	1	1	2	2	2	2				
Assignment	$\emptyset$	a	ab	abc	abcd	abcde	$\neg a$	$\neg ab$	$\neg abc$	$\neg abcd$	$\neg abcde$				
Cl. 1: $\neg a, b$	$\neg ab$	b	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Cl. 2: $\neg b, c$	$\neg bc$	$\neg bc$	c	✓	✓	✓	$\neg bc$	c	✓	✓	✓				
Cl. 3: $\neg c, d$	$\neg cd$	$\neg cd$	$\neg cd$	d	✓	✓	$\neg cd$	$\neg cd$	d	✓	✓				
Cl. 4: $\neg d, e$	$\neg de$	$\neg de$	$\neg de$	$\neg de$	e	✓	$\neg de$	$\neg de$	$\neg de$	e	✓				
Cl. 5: $\neg e, \neg a$	$\neg e \neg a$	$\neg e$	$\neg e$	$\neg e$	$\neg e$	$\emptyset$	✓	✓	✓	✓	✓				
BCP		b	c	d	e			c	d	e					
Decision	a					$\neg a$	b				<b>SAT</b>				

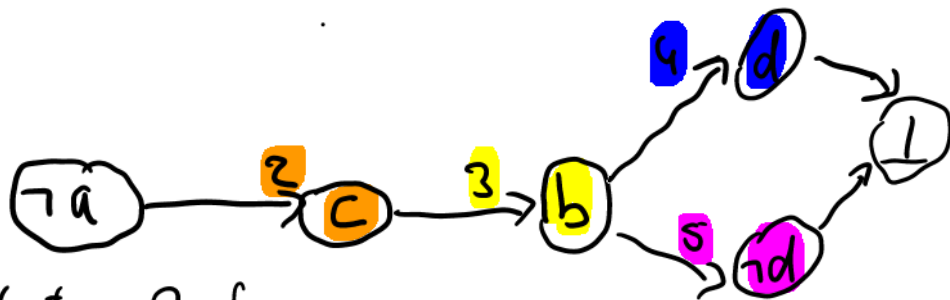


Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Decision Level	0	0	0	0	0										
Assignment	$\emptyset$	$\neg a$	$\neg a \neg b$	$\neg a \neg b \neg c$	$\neg a \neg b \neg c \neg d$										
Cl. 1: $\neg a, b$	$\neg a \neg b$	✓	✓	✓	✓										
Cl. 2: $\neg b, c$	$\neg b \neg c$	✓	✓	✓	✓										
Cl. 3: $\neg c, d$	$\neg c \neg d$	✓	✓	✓	✓										
Cl. 4: $\neg d, e$	$\neg d \neg e$	✓	✓	✓	✓										
Cl. 5: $\neg e, \neg a$	$\neg e \neg a$	✓	✓	✓	✓										
BCP															
PL	$\neg a$	$\neg b$	$\neg c$	$\neg d$	SAT										
Decision															

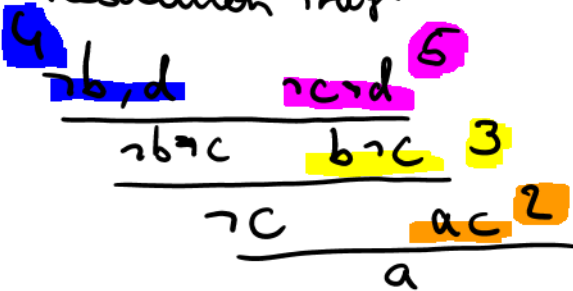


negative phase first!

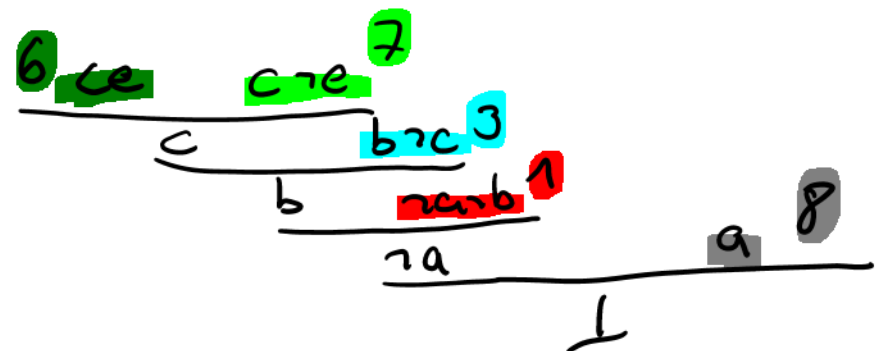
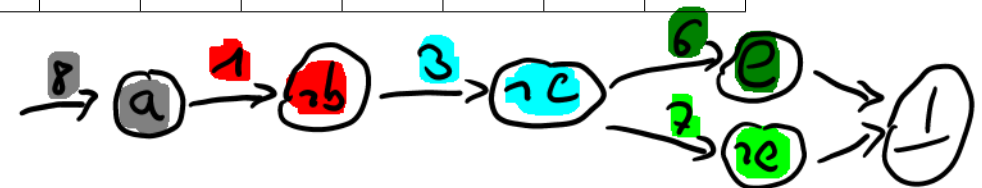
Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Decision Level	0	1	1	1	1	0	0	0	0	0					
Assignment	$\emptyset$	$\neg a$	$\neg a c$	$\neg a c b$	$\neg a c b \neg d$	$\emptyset$	$a$	$a \neg b$	$a \neg b \neg c$	$a \neg b \neg c$					
Cl. 1: $\neg a, \neg b$	$\neg a \neg b$	✓	✓	✓	✓	$\neg a \neg b$	$\neg b$	✓	✓	✓					
Cl. 2: $a, c$	$a c$	$c$	✓	✓	✓	$a c$	✓	✓	✓	✓					
Cl. 3: $b, \neg c$	$b \neg c$	$b \neg c$	$b$	✓	✓	$b \neg c$	$b \neg c$	$\neg c$	✓	✓					
Cl. 4: $\neg b, d$	$\neg b d$	$\neg b d$	$\neg b d$	$d$	$\emptyset$	$\neg b d$	$\neg b d$	✓	✓	✓					
Cl. 5: $\neg c, \neg d$	$\neg c \neg d$	$\neg c \neg d$	$\neg d$	$\neg d$	✓	$\neg c \neg d$	$\neg c \neg d$	✓	✓	✓					
Cl. 6: $c, e$	$c e$	$c e$	✓	✓	✓	$c e$	$c e$	$c e$	$e$	$\emptyset$					
Cl. 7: $c, \neg e$	$c \neg e$	$c \neg e$	✓	✓	✓	$c \neg e$	$c \neg e$	$c \neg e$	$\neg e$	✓					
Cl. 8: $a$						$a$	✓	✓	✓	✓					
BCP		$c$	$b$	$\neg d$		$a$	$\neg b$	$\neg c$	$\neg e$	UNSAT					
PL															
Decision	$\neg a$														



Resolution Proof:



← learned clause



Conflict at DL 0  $\leadsto$  UNSAT