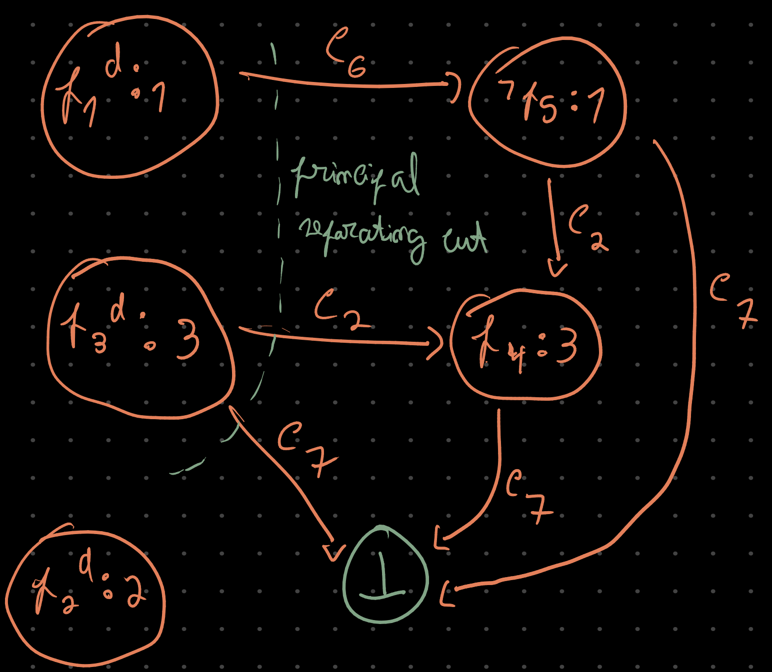
$$(\neg f_1 \vee f_3 \vee f_4 \vee f_5) \wedge (\neg f_3 \vee f_4 \vee f_5) \wedge (\neg f_1 \vee f_3 \vee \neg f_4) \wedge (f_1 \vee f_2)$$
$$\wedge (f_1 \vee \neg f_2) \wedge (\neg f_1 \vee \neg f_5) \wedge (\neg f_3 \vee \neg f_4 \vee f_5)$$

$\downarrow$ Set notation

$$X = \{\underbrace{\{\neg f_1, f_3, f_4, f_5\}}_{c_1}, \underbrace{\{\neg f_3, f_4, f_5\}}_{c_2}, \underbrace{\{\neg f_1, f_3, \neg f_4\}}_{c_3}, \underbrace{\{f_1, f_2\}}_{c_4}, \underbrace{\{f_1, \neg f_2\}}_{c_5},$$
$$\underbrace{\{\neg f_1, \neg f_5\}}_{c_6}, \underbrace{\{\neg f_3, \neg f_4, f_5\}}_{c_7}\}$$

1. $[\,]$
2. $[f_1^d]$ — by rule decide
3. $[f_1^d, \neg f_5]$ — by rule unit-prop (c_6)
4. $[f_1^d, \neg f_5, f_2^d]$ — by rule decide
5. $[f_1^d, \neg f_5, f_2^d, f_3^d]$ — by rule decide
6. $[f_1^d, \neg f_5, f_2^d, f_3^d, f_4]$ — by rule unit-prop (c_2)

Conflict with c_7



$$C = (\underset{d=1}{\neg f_1} \vee \underset{d=3}{\neg f_3}) \rightarrow c_8$$

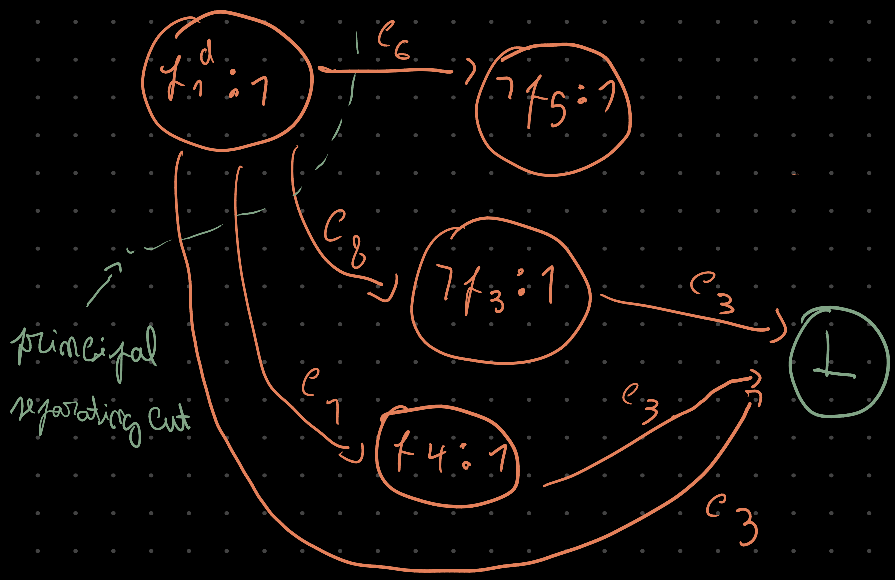
The second greatest decision level in C is 1, so we delete from w every literal with a decision level greater than 1.

7. $[p_1^d, \neg p_5]$ by rule backjump

8. $[p_1^d, \neg p_5, \neg p_3]$ by rule unit-prop (c_8)

9. $[p_1^d, \neg p_5, \neg p_3, p_4]$ by rule unit-prop (c_7)

conflict with c_3



$$C = \neg \underset{\overset{\uparrow}{d=1}}{p_1} \to c_9$$

The second greatest decision level is 0, so we delete all literals from W.

10. $[\ ]$ by rule backjump

11. $[\neg p_1]$ by rule unit-prop (c_9)

12. $[\neg p_1, p_2]$ by rule unit-prop (c_4)

conflict with c_5

13. fail by rule fail

Because there are no more decision literals inside the partial valuation, the formula is UNSAT