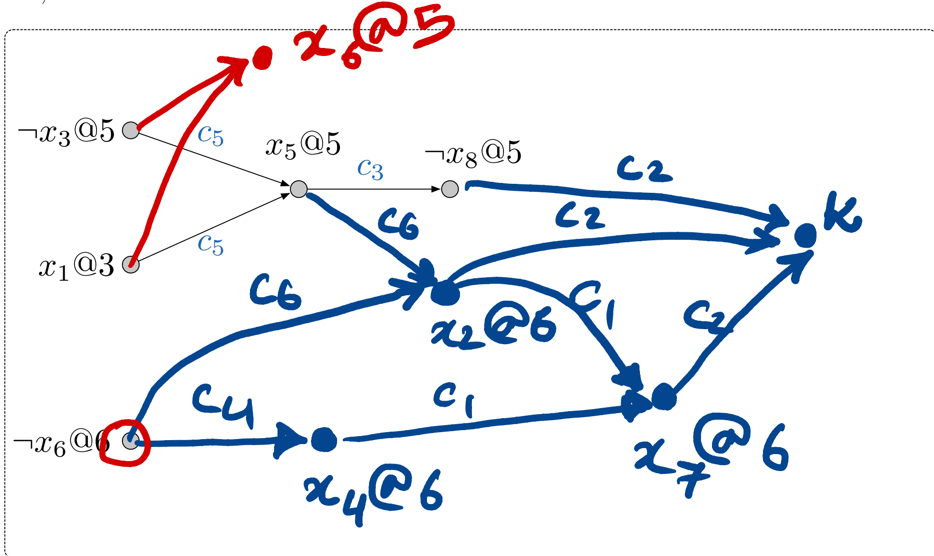
Consider a formula F that is being checked for satisfiability in CNF using the following set of clauses:

$$
\begin{array}{ll}
c_1 = \neg x_2 \lor \neg x_4 \lor x_7 & c_2 = \neg x_2 \lor \neg x_7 \lor x_8 \\
c_3 = \neg x_5 \lor \neg x_8 & c_4 = x_4 \lor x_6 \\
c_5 = \neg x_1 \lor x_3 \lor x_5 & c_6 = x_2 \lor \neg x_5 \lor x_6
\end{array}
$$

Here is a hypothetical implication graph from decisions previously made at levels 3 and 5 of a run of the DPLL algorithm, and we add a current decision node at the current level 6.



$C_2: \neg x_2 \lor \neg x_7 \lor x_8$ $\qquad$ $C_1: \neg x_2 \lor \neg x_4 \lor x_7$

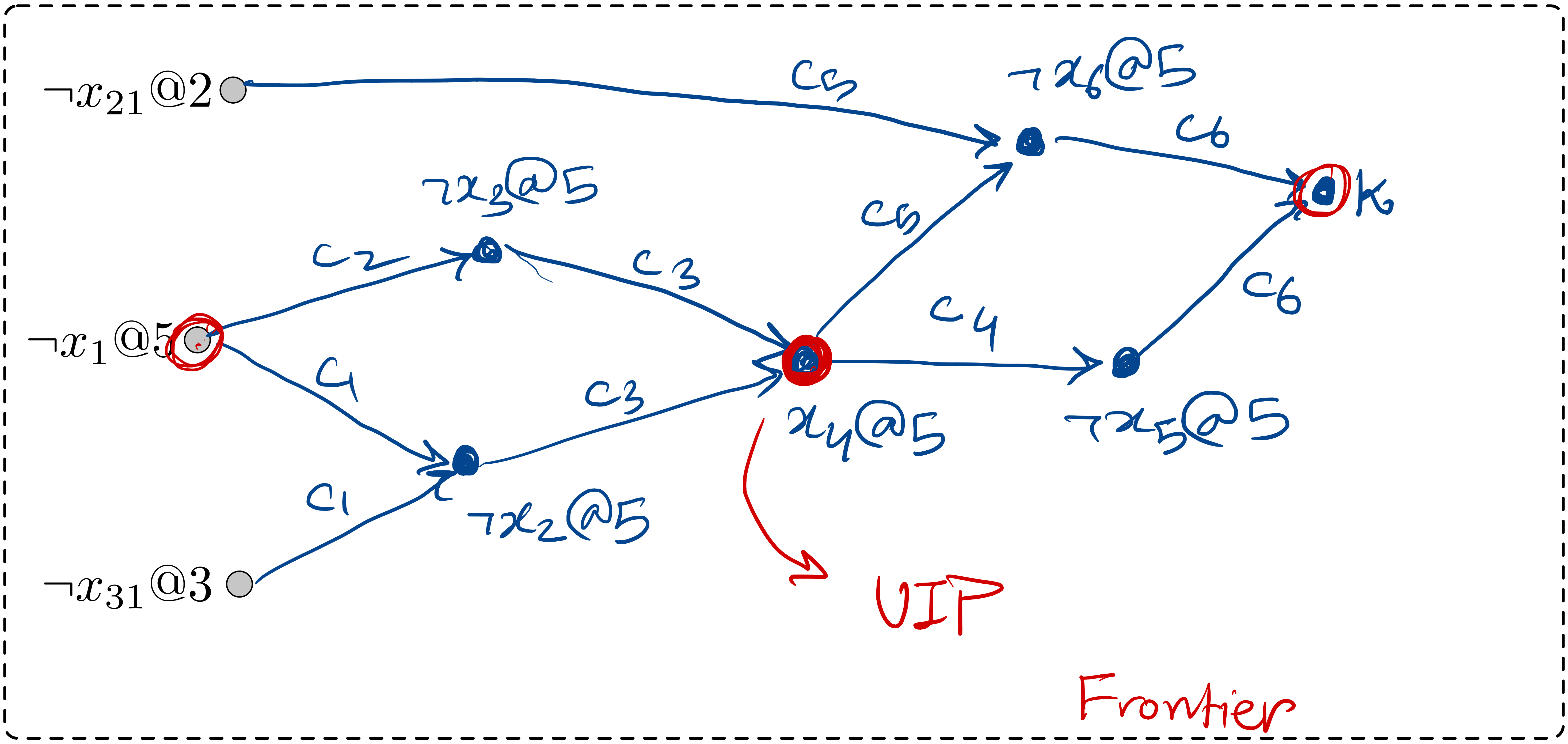
$\boxed{\neg x_2 \lor \neg x_4 \lor x_8}$ $\qquad$ $C_6: x_2 \lor \neg x_5 \lor x_6$

$\boxed{\neg x_4 \lor \neg x_5 \lor x_6 \lor x_8}$ $\qquad$ $C_3: \neg x_5 \lor \neg x_8$

$\boxed{\neg x_4 \lor \neg x_5 \lor x_6}$ $\qquad$ $C_5: \neg x_1 \lor x_3 \lor x_5$

$\boxed{\neg x_1 \lor \neg x_4 \lor x_3 \lor x_6}$ $\qquad$ $C_4: x_4 \lor x_6$

$C_7: \boxed{\neg x_1 \lor x_3 \lor x_6}$ asserting



$c_1 = x_1 \vee x_{31} \vee \neg x_2$

$c_2 = x_1 \vee \neg x_3$

$c_3 = x_2 \vee x_3 \vee x_4$

$c_4 = \neg x_4 \vee \neg x_5$

$c_5 = x_{21} \vee \neg x_4 \vee \neg x_6$

$c_6 = x_5 \vee x_6$

Clause Learning

$c_6 : x_5 \vee x_6$ $\quad$ $c_4 : \neg x_4 \vee \neg x_5$

$\boxed{\neg x_4 \vee x_6}$ $\quad$ $c_5 : x_{21} \vee \neg x_4 \vee \neg x_6$

$\boxed{\neg x_4 \vee x_{21}}$ $\quad$ $c_3 : x_2 \vee x_3 \vee x_4$

$\boxed{x_2 \vee x_3 \vee x_{21}}$ $\quad$ $c_1 : x_1 \vee x_{31} \vee \neg x_2$

$\boxed{x_1 \vee x_3 \vee x_{31} \vee x_{21}}$ $\quad$ $c_2 : x_1 \vee \neg x_3$

$\boxed{x_1 \vee x_{31} \vee x_{21}}$