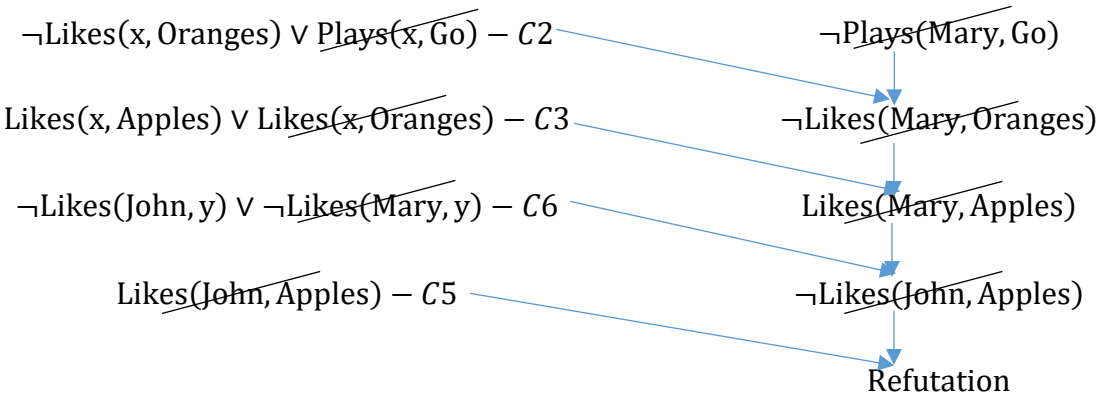
1. $(\neg Stench(x) \vee Adjacent(x, C)) \wedge (\neg Stench(x) \vee At(Wumpus, C))$
2.
   a. $\forall x[Likes(x, Apples) \Rightarrow Plays(x, Chess)]$
   b. $\forall x[Likes(x, Oranges) \Rightarrow Plays(x, Go)]$
   c. $\forall x[\neg((Likes(x, Apples) \vee Likes(x, Oranges)) \Rightarrow (Likes(x, Apples) \wedge Likes(x, Oranges))]$
   d. $Likes(John, Apples)$
   e. $\forall y[Likes(John, y) \Rightarrow \neg Likes(Mary, y)]$
3.
   a. $\neg Likes(x, Apples) \vee Plays(x, Chess)$ – C1
   b. $\neg Likes(x, Oranges) \vee Plays(x, Go)$ – C2
   c. $(Likes(x, Apples) \vee Likes(x, Oranges)) \wedge (\neg Likes(x, Apples) \wedge \neg Likes(x, Oranges))$ – C3 ∧ C4
   d. $Likes(John, Apples)$ – C5
   e. $\neg Likes(John, y) \vee \neg Likes(Mary, y)$ – C6
4.



   Sorry, this doesn't look really nice but I have no idea how to make it better ☹
5.

   Input:

```
problem.p                                                    out
% Does Mary play Go?

fof(a1,axiom,
    ! [X] : (likes(X,apples) => plays(X, chess))).

fof(a2,axiom,
    ! [X] : (likes(X,oranges) => plays(X, go))).

fof(a3,axiom,
    ! [X] : (~ ((likes(X,apples) <=> likes(X,oranges))))).

%fof(a3,axiom,
%    ! [X] : (~ ((likes(X,apples) | likes(X,oranges)) => ~ (likes(X,apples) & likes(X,oranges))))).

fof(a4,axiom, likes(john,apples)).

fof(a5,axiom,
    ! [Y] : (likes(john,Y) => ~ likes(mary, Y))).

fof(c1,conjecture,
    plays(mary, go)).
```

Output:

```
% Refutation found. Thanks to Tanya!
% SZS status Theorem for problem
% SZS output start Proof for problem
2. ! [X0] : (likes(X0,oranges) => plays(X0,go)) [input]
3. ! [X0] : ~((likes(X0,oranges) | likes(X0,apples)) => ~(likes(X0,oranges) & likes(X0,apples))) [input]
6. plays(mary,go) [input]
7. ~plays(mary,go) [negated conjecture 6]
9. ~plays(mary,go) [flattening 7]
11. ! [X0] : (plays(X0,go) | ~likes(X0,oranges)) [ennf transformation 2]
12. ! [X0] : ((likes(X0,oranges) & likes(X0,apples)) & (likes(X0,oranges) | likes(X0,apples))) [ennf transformation 3]
13. ! [X0] : (likes(X0,oranges) & likes(X0,apples) & (likes(X0,oranges) | likes(X0,apples))) [flattening 12]
16. ~likes(X0,oranges) | plays(X0,go) [cnf transformation 11]
19. likes(X0,oranges) [cnf transformation 13]
22. ~plays(mary,go) [cnf transformation 9]
24. plays(X0,go) [resolution 16,19]
25. $false [resolution 24,22]
% SZS output end Proof for problem
% ------------------------------
% Version: Vampire 4.5.1 (commit unknown)
% Termination reason: Refutation

% Memory used [KB]: 4861
% Time elapsed: 0.0000 s
% ------------------------------
% ------------------------------
```