

Using convention as given in the problem

Labels:

L1W, L1Y, L1B, L2W, L2Y, L2B, L3W, L3Y, L3B

Observations:

O1W, O1Y, O1B, O2W, O2Y, O2B, O3W, O3Y, O3B

Contains:

C1W, C1Y, C1B C2W, C2Y, C2B C3W, C3Y, C3B

Knowledge base:

1. L1W -> -C1W
2. L1Y -> -C1Y
3. L1B -> -C1B
4. L2W -> -C2W
5. L2Y -> -C2Y
6. L2B -> -C2B
7. L3W -> -C3W
8. L3Y -> -C3Y
9. L3B -> -C3B
10. C1B or C1W or C1Y
11. C2B or C2W or C2Y
12. C3B or C3W or C3Y
13. C1B -> -C1W and -C1Y
14. C1W -> -C1B and -C1Y
15. C1Y -> -C1B and -C1W
16. C2B -> -C2W and -C2Y
17. C2W -> -C2B and -C2Y
18. C2Y -> -C2B and -C2W
19. C3B -> -C3W and -C3Y
20. C3W -> -C3B and -C3Y
21. C3Y -> -C3B and -C3W
22. C1W -> -C2W and -C3W
23. C1Y -> -C2Y and -C3Y
24. C1B -> -C2B and -C3B
25. C2W -> -C1W and -C3W
26. C2Y -> -C1Y and -C3Y
27. C2B -> -C1B and -C3B
28. C3W -> -C1W and -C2W
29. C3Y -> -C1Y and -C2Y
30. C3B -> -C1B and -C2B
31. O1Y -> C1Y or C1B
32. O1W -> C1W or C1B
33. O2Y -> C2Y or C2B
34. O2W -> C2W or C2B

35. O3Y -> C3Y or C3B

36. O3W -> C3W or C3B

CNF:

Space in between means OR

-L1W -C1W

-L1Y -C1Y

-L1B -C1B

-L2W -C2W

-L2Y -C2Y

-L2B -C2B

-L3W -C3W

-L3Y -C3Y

-L3B -C3B

C1B C1W C1Y

C2B C2W C2Y

C3B C3W C3Y

-C1B -C1W

-C1B -C1Y

-C1W -C1B

-C1W -C1Y

-C1Y -C1B

-C1Y -C1W

-C2B -C2W

-C2B -C2Y

-C2W -C2B

-C2W -C2Y

-C2Y -C2B

-C2Y -C2W

-C3B -C3W

-C3B -C3Y

-C3W -C3B

-C3W -C3Y

-C3Y -C3B

-C3Y -C3W

-C1W -C2W

-C1W -C3W

-C1Y -C2Y

-C1Y -C3Y

-C1B -C2B

-C1B -C3B

-C2W -C1W

-C2W -C3W

-C2Y -C1Y
-C2Y -C3Y
-C2B -C1B
-C2B -C3B
-C3W -C1W
-C3W -C2W
-C3Y -C1Y
-C3Y -C2Y
-C3B -C1B,
-C3B -C2B
-O1Y C1Y C1B
-O2Y C2Y C2B
-O2W C2W C2B
-O3Y C3Y C3B
-O3W C3W C3B

#FACTS

O1Y
O2W
O3Y
L1W
L2Y
L3B

#NEGATION OF QUERY

-C2W