```
[14:56]cazzola@surtur:~/pa/es1>python3 sudoku.py
     1] :- [(1, 2, 3, 4), (3, 4, 1, 2), (2, 1, 4,
                                                                      3), (4, 3, 2,
                                                                                          1)]
                                              1, 2),
                                                        (2, 3, 4,
                                                                      1),
                                    (3, 4,
S[
              [(1, 2,
                         3,
                              4),
                                                                             (4,
                              4),
                                                                      3),
                                                        (4, 1, 2,
              [(1, 2,
                                    (3, 4, 1, 2),
                                                                             (2,
                              4),
              [(1, 2,
                                    (3,
                                         4, 1, 2),
                                                        (4, 3, 2,
                                                                      1),
                                                                                           3)]
S[
                         3,
                                                                             (2,
              [(1, 2,
                                         4, 2,
                                                        (2, 1, 4,
                                                                      3),
S[
                              4),
                                    (3,
                                                                             (4,
                         3,
                                                  1),
                                                                      2),
              [(1, 2,
                                                  1),
                                                        (4, 3, 1,
S[
                              4),
                                    (3,
                                         4, 2,
                                                                                           3)]
     6]
                         3,
                                                                             (2,
                         3,
                                                  2),
                                                                      3),
              [(1, 2,
S[
     7]
                              4),
                                    (4,
                                         3, 1,
                                                        (2, 1, 4,
                                                                             (3,
                                              1,
                                                  2),
                                                                  2,
              [(1, 2,
                         3,
                                         3,
                                                                      1),
S[
     8]
                              4),
                                    (4,
                                                        (3, 4,
                                                                             (2,
                                                                                  1,
                                                                                           3)]
              [(1, 2,
                                         3,
                                              2,
                                                                      3),
S[
     9]
         :-
                         3,
                              4),
                                    (4,
                                                        (2, 1, 4,
                                                                             (3,
                                                  1),
              [(1, 2,
                         3,
                                         3,
                                              2,
                                                  1),
                                                        (2, 4, 1,
                                                                      3),
S[
         :-
                              4),
                                    (4,
                                                                             (3,
                                                                                           2)]
    10]
                                                                                  1,
         : -
                         3,
                              4),
                                         3,
                                              2,
                                                                      2),
                                    (4,
                                                  1),
                                                        (3, 1, 4,
                                                                                      1,
S[
    11]
              [(1, 2,
                                                                             (2,
                                                                                           3)]
                                                                                  4,
                                         3,
                                              2,
                                                  1),
                                                                      2),
    12]:-
                         3,
                                                                  1,
                                                        (3, 4,
                                                                                  1,
S[
              [(1, 2,
                              4),
                                    (4,
                                                                             (2,
                                                                                           3)]
                                         4,
                         4,
                                              1,
                                                                  3,
                                                                      4),
    13] :-
              [(1, 2,
                                                  2),
                                                                                      2,
                                                        (2, 1,
                                                                                  3,
S[
                              3),
                                    (3,
                                                                             (4,
                                                                                           1)]
              [(1, 2,
                         4,
                                         4,
                                              1,
                                                                 2,
                                                                      1),
    14] :-
                              3),
                                                  2),
                                                                                      3,
S[
                                    (3,
                                                        (4, 3,
                                                                             (2,
                                                                                  1,
                                                                                          4)]
                         4,
                                         4,
                                              2,
                                                  1),
                                                                      4),
    15]:-
              [(1, 2,
                              3),
                                    (3,
                                                        (2, 1, 3,
                                                                                  3,
                                                                                      1,
                                                                                           2)]
S[
                                                                             (4,
                                              2,
    16]:-
                         4,
                              3),
                                         4,
                                                  1),
                                                                      4),
                                                                                  1,
                                                                                      3,
             [(1, 2,
                                    (3,
                                                        (2, 3, 1,
                                                                                           2)]
S[
                                                                             (4,
                         4,
                                         4,
                                              2,
                                                  1),
                                                                  3,
                                                                      2),
    17] :-
                              3),
                                                                                  3,
                                                                                      1,
             [(1, 2,
                                    (3,
                                                        (4, 1,
S[
                                                                             (2,
                                                                                           4)]
                                         4,
                                              2,
                         4,
                                                  1),
                                                                  1,
                                                                      2),
    18] :-
                              3),
                                    (3,
                                                        (4, 3,
                                                                                  1,
                                                                                      3,
             [(1, 2,
                                                                             (2,
                                                                                           4)]
S[
                                         3,
                                                                  3,
                                                                      4),
                                              1,
                                                  2),
                                                                                  4,
    19] :-
                         4, 3),
                                    (4,
                                                                                      2,
S[
             [(1, 2,
                                                        (2, 1,
                                                                             (3,
                                                                                           1)]
                         4,
                                         3,
                                              1,
                                                  2),
                                                                  3,
                                                                      1),
                                                                                      2,
    20]:-
             [(1, 2,
                              3),
                                    (4,
                                                        (2, 4,
                                                                                  1,
S[
                                                                             (3,
                                                                                           4)]
             [(1, 2,
                             3),
                                         3,
                                                  2),
                         4,
                                              1,
                                                        (3, 1, 2,
                                                                      4),
                                                                                      3,
S[ 21] :-
                                    (4,
                                                                             (2,
                                                                                           1)]
                                                                                  4,
                         4,
                             3),
                                    (4, 3,
                                              1,
                                                  2),
                                                                      1),
                                                        (3, 4, 2,
                                                                                  1,
                                                                                      3,
                                                                                           4)]
S[ 22] :-
             [(1, 2,
                                                                             (2,
                             3),
                         4,
                                    (4, 3,
                                              2,
                                                  1),
                                                        (2, 1, 3,
                                                                      4),
                                                                                  4, 1,
                                                                             (3,
S[ 23] :-
             [(1, 2,
                                                                                           2)]
                         4, 3),
                                                  1),
                                              2,
                                                                      2),
                                                                                  1,
                                                                                      3,
S[ 24] :-
             [(1, 2,
                                    (4, 3,
                                                        (3, 4, 1,
                                                                             (2,
                                                                                           4)]
                             4),
                                                  3),
                                    (2, 4,
                                              1,
                                                                      2),
S[ 25] :-
             [(1, 3,
                                                        (3, 1, 4,
                                                                             (4,
                                                                                      3,
                                                                                           1)]
                         2,
                                                                                  2,
                             4),
                                                  3),
                                                                      1),
                                                                             (4,
                                                                                  1,
                                                                                      3,
S[ 26] :-
             [(1, 3,
                                    (2, 4, 1,
                                                        (3, 2, 4,
                                                                                           2)]
                         2,
                             4),
                                                  3),
                                                        (4, 1, 3,
                                                                      2),
                                                                                  2,
                                                                                      4,
                         2,
                                                                             (3,
S[ 27] :-
             [(1, 3,
                                    (2, 4, 1,
                                                                                          1)]
                              4),
                                                  3),
                                                                      1),
                         2,
                                                        (4, 2, 3,
                                                                             (3,
S[ 28] :-
             [(1, 3,
                                    (2, 4, 1,
                                                                                      4, 2)]
                                                                                  1,
                              4),
                                                  1),
                                                                      2),
                         2,
                                                                             (4,
                                                                                  2,
                                                                                      1,
S[ 29] :-
             [(1, 3,
                                    (2, 4, 3,
                                                        (3, 1, 4,
                                                                                           3)]
                                                  1),
                                                                      3),
S[ 30] :-
             [(1, 3,
                         2,
                              4),
                                    (2, 4, 3,
                                                        (4, 2, 1,
                                                                             (3,
                                                                                  1,
                                                                                      4, 2)]
                                    (4, 2, 1,
                                                                      1),
                                                                                  1,
S[ 31] :-
             [(1, 3,
                         2,
                              4),
                                                  3),
                                                        (2, 4, 3,
                                                                             (3,
                                                                                      4, 2)]
             [(1, 3,
                                                                      2),
S[ 32] :-
                                              1,
                                                        (3, 1, 4,
                                                                             (2,
                         2,
                              4),
                                    (4, 2,
                                                  3),
                                                                                  4, 3,
                                                                                          1)]
             [(1, 3,
                                    (4, 2,
                                              3,
                                                        (2, 1, 4,
                                                                      3),
S[ 33] :-
                                                                             (3,
                         2,
                              4),
                                                  1),
                                                                                  4,
                                                                                      1,
                                                                                          2)]
S[ 34] :- [(1, 3,
                                    (4, 2,
                                              3,
                                                        (2, 4, 1,
                                                                      3),
                                                                             (3,
                         2,
                              4),
                                                  1),
                                                                                  1, 4, 2)]
S[ 35] :- [(1, 3,
                                   (4, 2,
                                              3,
                                                                      2),
                         2,
                              4),
                                                  1),
                                                        (3, 1, 4,
                                                                             (2,
                                                                                  4, 1,
                                                                                          3)]
S[ 36] :- [(1, 3,
                         2,
                                   (4, 2, 3,
                                                        (3, 4, 1,
                                                                      2),
                                                                             (2,
                              4),
                                                  1),
                                                                                  1, 4, 3)]
S[ 37] :- [(1, 3,
                                   (2, 4,
                                                                      4),
                                                        (3, 1, 2,
                                                                             (4,
                         4,
                              2),
                                              1,
                                                  3),
                                                                                  2, 3,
                         4,
                                   (2, 4,
                                                  3),
                                              1,
                                                        (4, 2, 3,
                                                                      1),
S[ 38] :-
                                                                            (3,
             [(1, 3,
                              2),
                                                                                  1, 2, 4)]
                         4,
                              2),
                                   (2, 4, 3,
                                                        (3, 1, 2,
                                                                      4),
                                                                            (4, 2, 1,
                                                                                           3)]
S[ 39] :-
             [(1, 3,
                                                  1),
                              2), (2, 4, 3,
                                                                      4), (4, 1, 2, 3)]
                                                  1),
                                                        (3, 2, 1,
S[
   40] :- [(1, 3,
                         4,
                              2), (2, 4, 3,
                                                        (4, 1, 2,
                                                                      3), (3, 2, 1, 4)]
   41] :- [(1, 3,
                         4,
                                                  1),
S[
                         4,
                              2), (2, 4, 3,
                                                  1),
                                                        (4, 2, 1,
                                                                      3), (3, 1, 2, 4)]
   42] :- [(1, 3,
S[
                         4,
                              2), (4, 2, 1,
                                                        (2, 1, 3,
                                                 3),
   43] :- [(1, 3,
                                                                      4), (3, 4, 2,
                                                                                           1)]
S[
                         4,
                              2), (4, 2, 1, 3),
                                                                      1), (3, 1, 2, 4)]
   44] :- [(1, 3,
                                                        (2, 4, 3,
S[
                         4,
                                                        (3, 1, 2,
                              2), (4, 2, 1, 3),
S[
   45] :- [(1, 3,
                                                                      4), (2, 4, 3,
                                                                                           1)]
                                                        (3, 4, 2,
                                                                      1), (2, 1, 3, 4)]
   46] :- [(1, 3,
                         4,
                              2), (4, 2, 1, 3),
S[
                         4,
                              2),
                                  (4, 2, 3, 1),
                                                        (2, 4, 1,
                                                                      3), (3, 1, 2, 4)]
   47] :- [(1, 3,
S[
                         4,
                              2), (4, 2, 3,
                                                                      4), (2, 4, 1,
   48] :- [(1, 3,
                                                  1),
                                                        (3, 1, 2,
                                                                                          3)]
S[
                              3), (2, 3, 1,
                                                  4),
   49] :- [(1, 4,
                         2,
                                                        (3, 1, 4,
                                                                      2), (4, 2, 3,
                                                                                          1)]
S[
                              3), (2, 3, 1,
                                                  4),
                                                                      1), (4, 1, 3,
S[ 50] :- [(1, 4,
                         2,
                                                        (3, 2, 4,
                                                                                          2)]
                              3), (2, 3, 1,
                                                  4),
                                                        (4, 1, 3,
                                                                      2), (3, 2, 4,
S[ 51] :- [(1, 4,
                         2,
                                                                                          1)]
S[ 52] :- [(1, 4,
                         2,
                                              1,
                                                 4),
                                                        (4, 2, 3,
                                                                      1), (3, 1, 4,
                              3), (2, 3,
                                                                                          2)]
                              3), (2, 3, 4,
                                                  1),
                                                                      4), (4,
S[ 53] :- [(1, 4,
                         2,
                                                        (3, 2, 1,
                                                                                  1, 3,
                                                                                          2)]
                         2,
                                                  1),
                                                                      2), (3,
S[ 54] :- [(1, 4,
                              3), (2, 3, 4,
                                                        (4, 1, 3,
                                                                                  2, 1,
                                                                                          4)]
                         2,
                                              1,
                                                  4),
                                                                      1), (4,
S[ 55] :- [(1, 4,
                              3), (3, 2,
                                                        (2, 3, 4,
                                                                                  1, 3,
                                                                                          2)]
                                                  4),
                                                                      2), (2,
S[ 56] :- [(1, 4,
                         2, 3), (3, 2, 1,
                                                        (4, 1, 3,
                                                                                  3, 4,
                                                                                          1)]
S[ 57] :- [(1, 4,
                         2, 3), (3, 2, 4,
                                                                      4), (4, 3, 1,
                                                 1),
                                                        (2, 1, 3,
                                                                                          2)]
S[ 58] :- [(1, 4,
                         2, 3), (3, 2, 4,
                                                 1),
                                                        (2, 3, 1,
                                                                      4), (4, 1, 3,
                                                                                          2)]
                         2, 3), (3, 2, 4,
                                                                      2), (2, 3, 1,
S[ 59] :- [(1, 4,
                                                 1),
                                                        (4, 1, 3,
                                                                                          4)]
S[ 60] :- [(1, 4,
                         2, 3), (3, 2, 4,
                                                                      2), (2, 1, 3,
                                                  1),
                                                        (4, 3, 1,
                                                                                          4)]
S[ 61] :- [(1, 4,
                                                  4),
                                                        (3, 2, 4,
                         3, 2), (2,
                                         3, 1,
                                                                      1), (4, 1, 2,
                                                                                          3)]
S[ 62] :- [(1, 4,
                                                 4),
                                                                      3), (3, 2, 4,
                         3, 2), (2,
                                         3, 1,
                                                        (4, 1, 2,
                                                                                          1)]
S[ 63] :- [(1, 4,
                         3, 2), (2, 3, 4,
                                                 1),
                                                        (3, 1, 2,
                                                                      4), (4, 2, 1,
                                                                                           3)]
S[ 64] :-
             [(1, 4,
                              2),
                                   (2,
                                                 1),
                                                                      4),
                         3,
                                         3, 4,
                                                        (3, 2, 1,
                                                                           (4,
                                                                                 1, 2,
                                                                                           3)]
                                             4,
                         3, 2),
                                                  1),
                                                                      3), (3,
             [(1, 4,
                                   (2,
                                         3,
                                                        (4, 1,
                                                                 2,
S[ 65] :-
                                                                                 2, 1,
                                                                                          4)]
                                             4,
S[ 66] :- [(1, 4,
                                                  1),
                                                                 1,
                                                                      3), (3,
                         3, 2), (2, 3,
                                                        (4, 2,
                                                                                  1,
                                                                                     2,
                                                                                          4)]
                                                  4),
S[ 67] :- [(1, 4,
                                              1,
                         3, 2), (3, 2,
                                                        (2, 1,
                                                                 4,
                                                                      3), (4,
                                                                                  3, 2,
                                                                                           1)]
                                                  4),
S[ 68] :- [(1, 4,
                         3, 2), (3, 2,
                                             1,
                                                        (2, 3, 4,
                                                                      1), (4,
                                                                                     2,
                                                                                  1,
                                                                                           3)]
S[ 69] :- [(1, 4,
                         3, 2),
                                             1,
                                                  4),
                                                       (4, 1,
                                                                      3), (2,
                                                                                  3, 4,
                                   (3, 2,
                                                                 2,
                                                                                           1)]
                                             1,
S[ 70] :- [(1, 4,
                                                                      1), (2, 1, 4,
                         3, 2), (3, 2,
                                                 4), (4, 3, 2,
                                                                                           3)]
S[ 71] :- [(1, 4,
                         3, 2), (3, 2, 4,
                                                 1), (2, 3, 1,
                                                                      4), (4, 1, 2,
                                                                                           3)]
                                                 1), (4, 1, 2, 3), (2, 3, 1,
S[ 72] :- [(1, 4,
                        3, 2), (3, 2, 4,
                                                                                          4)]

       SI 72] :- [(1, 4, 3, 2), (3, 2, 4, 1), (4, 1, 2, 3), (2, 3, 1, 4)]

       S[ 73] :- [(2, 1, 3, 4), (3, 4, 1, 2), (1, 2, 4, 3), (4, 3, 2, 1)]

       S[ 74] :- [(2, 1, 3, 4), (3, 4, 1, 2), (4, 3, 2, 1), (1, 2, 4, 3)]

       S[ 75] :- [(2, 1, 3, 4), (3, 4, 2, 1), (1, 2, 4, 3), (4, 2, 1, 3)]

       S[ 76] :- [(2, 1, 3, 4), (3, 4, 2, 1), (1, 3, 4, 2), (4, 2, 1, 3)]

       S[ 77] :- [(2, 1, 3, 4), (3, 4, 2, 1), (4, 2, 1, 3), (1, 3, 4, 2)]

       S[ 78] :- [(2, 1, 3, 4), (4, 3, 1, 2), (1, 2, 4, 3), (3, 4, 2, 1)]

       S[ 79] :- [(2, 1, 3, 4), (4, 3, 1, 2), (1, 2, 4, 3), (3, 4, 2, 1)]

       S[ 80] :- [(2, 1, 3, 4), (4, 3, 1, 2), (1, 4, 2, 3), (3, 2, 4, 1)]

       S[ 81] :- [(2, 1, 3, 4), (4, 3, 1, 2), (3, 2, 4, 1), (1, 4, 2, 3)]

       S[ 82] :- [(2, 1, 3, 4), (4, 3, 1, 2), (3, 4, 2, 1), (1, 2, 4, 3)]

       S[ 83] :- [(2, 1, 3, 4), (4, 3, 2, 1), (1, 2, 4, 3), (3, 4, 1, 2)]

       S[ 84] :- [(2, 1, 3, 4), (4, 3, 2, 1), (1, 2, 4, 3), (3, 4, 1, 2)]

       S[ 85] :- [(2, 1, 4, 3), (3, 4, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1)]

       S[ 86] :- [(2, 1, 4, 3), (3, 4, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1)]

       S[ 87] :- [(2, 1, 4, 3), (3, 4, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1)]

       S[ 88] :- [(2, 1, 4, 3), (3, 4, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1)]

       S[ 88] :- [(2, 1, 4, 3), (3, 4, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1)]

       S[ 90] :- [(2, 1, 4, 3), (4, 3, 1, 2), (1, 2, 3, 4), (4, 3, 2, 1), (1, 2, 3, 4)]

       S[ 90] :- [(2, 1, 4, 3), (4, 3, 2, 1), (1, 2, 3, 4),
S[ 73] :- [(2, 1,
                        3, 4), (3, 4, 1,
                                                 2), (1, 2, 4, 3), (4, 3, 2,
```