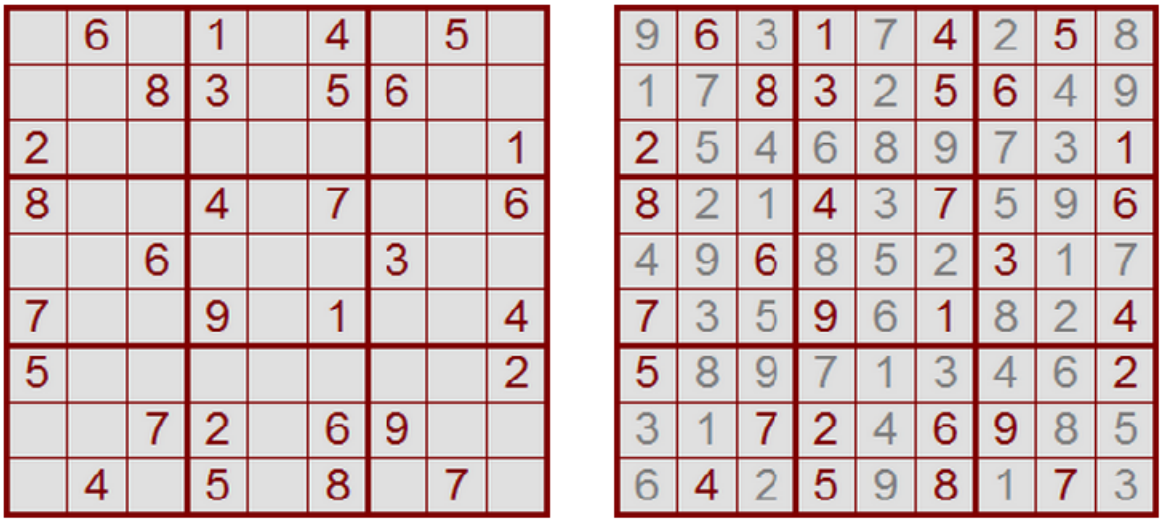
UVa Online Judge

989 Su Doku

In many newspapers we may find some puzzles to solve, one of those is Su Doku. Given a grid 9×9 with some of entries filled, the objective is to fill in the grid so that every row, every column, and every 3×3 box contains the digits 1 through 9.



	6		1		4		5	
		8	3		5	6		
2								1
8			4		7			6
		6				3		
7			9		1			4
5								2
		7	2		6	9		
	4		5		8		7	

9	6	3	1	7	4	2	5	8
1	7	8	3	2	5	6	4	9
2	5	4	6	8	9	7	3	1
8	2	1	4	3	7	5	9	6
4	9	6	8	5	2	3	1	7
7	3	5	9	6	1	8	2	4
5	8	9	7	1	3	4	6	2
3	1	7	2	4	6	9	8	5
6	4	2	5	9	8	1	7	3

source: http://www.sudoku.com

Input

Input contains several test cases separated by a blank line. Each of them contains an integer n such that $1 \leq n \leq 3$ and a grid $n^2 \times n^2$ with some of the entries filled with digits from 1 to n^2 (an entrie not filled will have 0). In this case, the objective is to fill in the grid so that every row, every column, and every $n \times n$ box contains the digits 1 through n^2.

Output

A solution for the problem. If exists more than one, you should give the lower one assuming a lexicographic order. If there is no solution, you should print '`NO SOLUTION`'. For lexicographic comparison you should consider lines in first place. Print a blank line between test cases.

Sample Input

```
3
0 6 0 1 0 4 0 5 0
0 0 8 3 0 5 6 0 0
2 0 0 0 0 0 0 0 1
8 0 0 4 0 7 0 0 6
0 0 6 0 0 0 3 0 0
7 0 0 9 0 1 0 0 4
5 0 0 0 0 0 0 0 2
0 0 7 2 0 6 9 0 0
0 4 0 5 0 8 0 7 0
```

Sample Output

```
9 6 3 1 7 4 2 5 8
1 7 8 3 2 5 6 4 9
2 5 4 6 8 9 7 3 1
8 2 1 4 3 7 5 9 6
4 9 6 8 5 2 3 1 7
7 3 5 9 6 1 8 2 4
5 8 9 7 1 3 4 6 2
3 1 7 2 4 6 9 8 5
6 4 2 5 9 8 1 7 3
```