Campus Test
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Round B China New Grad Test 2014

A. Sudoku Checker

[B. Meet and party](#)

[C. Hex](#)

[D. Dragon Maze](#)

[E. Ignore all my comments](#)

[Questions asked](#)

−   Submissions

Sudoku Checker

5pt	Not attempted **1471/2010 users** correct (73%)
9pt	Not attempted **1146/1443 users** correct (79%)

Meet and party

9pt	Not attempted **496/823 users** correct (60%)
15pt	Not attempted **47/409 users** correct (11%)

Hex

12pt	Not attempted **19/260 users** correct (7%)
13pt	Not attempted **14/18 users** correct (78%)

Dragon Maze

8pt	Not attempted **336/594 users** correct (57%)
12pt	Not attempted **229/330 users** correct (69%)

Ignore all my comments

17pt	Not attempted **216/468 users** correct (46%)
0pt	Not attempted

−   Top Scores

TankEngineer	100
Nekosyndrome	100
l521530	100
W.Junqiao	100
LTzycLT	100
iloahz	100

Practice Mode

[Contest scoreboard](#) | [Sign in](#)

Problem A. **Sudoku Checker**

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input 5 points	[Solve A-small]
Large input 9 points	[Solve A-large]

Problem

Sudoku is a popular single player game. The objective is to fill a 9x9 matrix with digits so that each column, each row, and all 9 non-overlapping 3x3 sub-matrices contain all of the digits from 1 through 9. Each 9x9 matrix is partially completed at the start of game play and typically has a unique solution.

Given a completed N^2xN^2 Sudoku matrix, your task is to determine whether it is a *valid* solution. A *valid* solution must satisfy the following criteria:

- Each row contains each number from **1** to N^2, once each.
- Each column contains each number from **1** to N^2, once each.
- Divide the N^2xN^2 matrix into N^2 non-overlapping **N**x**N** sub-matrices. Each sub-matrix contains each number from **1** to N^2, once each.

You don't need to worry about the uniqueness of the problem. Just check if the given matrix is a valid solution.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case starts with an integer **N**. The next N^2 lines describe a completed Sudoku solution, with each line contains exactly N^2 integers. All input integers are positive and less than 1000.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is "Yes" (quotes for clarity only) if it is a valid solution, or "No" (quotes for clarity only) if it is invalid. Note that the judge is case-sensitive, so answers of "yes" and "no" will not be accepted.

Limits

1 ≤ **T** ≤ 100.

Small dataset

N = 3.

Large dataset

3 ≤ **N** ≤ 6.

Sample

Input	Output
3	Case #1: Yes
3	Case #2: No
5 3 4 6 7 8 9 1 2	Case #3: No
6 7 2 1 9 5 3 4 8	
1 9 8 3 4 2 5 6 7	
8 5 9 7 6 1 4 2 3	
4 2 6 8 5 3 7 9 1	
7 1 3 9 2 4 8 5 6	
9 6 1 5 3 7 2 8 4	
2 8 7 4 1 9 6 3 5	
3 4 5 2 8 6 1 7 9	
3	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
1 2 3 4 5 6 7 8 9	
3	
5 3 4 6 7 8 9 1 2	
6 7 2 1 9 5 3 4 8	
1 9 8 3 4 2 5 6 7	
8 5 9 7 6 1 4 2 3	
4 2 6 8 999 3 7 9 1	
7 1 3 9 2 4 8 5 6	
9 6 1 5 3 7 2 8 4	
2 8 7 4 1 9 6 3 5	
3 4 5 2 8 6 1 7 9	

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