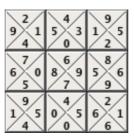# Tetravex Puzzle

TetraVex is a challenging computer brain teaser. The object of the game is to fill the grid with the tiles so that the numbers on the adjacent edges of each tile match, much like aligning domino tiles.

Given the 9 tiles, you have to find out whether it is possible to solve the puzzle. Each tile is represented using 4 digits. A tile is given in the order A B C D in the clockwise direction starting from top cell. So the top left tile is denoted as '2 1 4 9' and the bottom right as '2 1 6 6'. You cannot rotate the tiles, that is the original order must be preserved.

Input

There will be many cases in the input file. The first line gives the number of test cases (<= 20). Each case consists of 9 lines giving 4 integers each. Each line gives the information of a tile in the order A B C D. The tiles are randomly given.

Output

For each case, output YES or NO. Follow the sample for exact format

Example

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

Output:
Case 1: YES

Case 2: NO