

Consider an $N \times N$ square grid with each cell having a value of 0 or 1, where N is always odd. $2(N - 1)$ of these cells have a value of 1, while the rest have a value of 0. It is possible to do the following operations on the grid:

- Swap 2 rows
- Swap 2 columns

For a given grid, find out if it is possible to arrange all the 1s using a series of swap operations such that they form a diamond shape, as shown in the following example for $N = 5$.

```
0 0 1 0 0
0 1 0 1 0
1 0 0 0 1
0 1 0 1 0
0 0 1 0 0
```

Input Format

The first line of the input gives the number of test cases, T . For each test case, the first line contains a single integer N , the size of the grid. N more lines with N space separated values (0 or 1) each follow; the j^{th} value of the i^{th} line is the value at i, j of the grid.

Constraints

$1 \leq T \leq 100$

$3 \leq N \leq 57$

Output Format

For each test case, output one line saying YES if it is possible, NO otherwise.

Sample Input 0

```
2
5
1 0 0 1 0
0 0 1 0 0
0 1 0 0 1
1 0 0 1 0
0 0 1 0 0
3
1 1 1
0 0 0
0 1 0
```

Sample Output 0

```
YES
```

Explanation 0

For case 1, swapping columns 1 & 2 (1 indexed) and then swapping rows 1 & 2 gives a diamond shape.
For case 2, no matter how many swaps we do, it is not possible to reach the arrangement,

0 1 0

1 0 1

0 1 0