

Submissions

Tic-Tac-Toe-Tomek

10pt	Not attempted 19860/21861 users correct (91%)
20pt	Not attempted 16122/19755 users correct (82%)

Lawnmower

10pt	Not attempted 12579/14509 users correct (87%)
30pt	Not attempted 10569/12136 users correct (87%)

Fair and Square

10pt	Not attempted 17569/18199 users correct (97%)
35pt	Not attempted 6080/15270 users correct (40%)
55pt	Not attempted 872/3725 users correct (23%)

Treasure

20pt	Not attempted 1359/4458 users correct (30%)
60pt	Not attempted 141/547 users correct (26%)

Top Scores

netkuba	250
pieguy	250
tanakh	250
cgy4ever	250
STEP5	250
Xhark	250
Balajiganapathi	250
sohelH	250
krijgertje	250
romanandreev	250

Problem B. Lawnmower

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
10 points

Solve B-small

Large input
30 points

Solve B-large

Problem

Alice and Bob have a lawn in front of their house, shaped like an **N** metre by **M** metre rectangle. Each year, they try to cut the lawn in some interesting pattern. They used to do their cutting with shears, which was very time-consuming; but now they have a new automatic lawnmower with multiple settings, and they want to try it out.

The new lawnmower has a height setting - you can set it to any height **h** between 1 and 100 millimetres, and it will cut all the grass higher than **h** it encounters to height **h**. You run it by entering the lawn at any part of the edge of the lawn; then the lawnmower goes in a straight line, perpendicular to the edge of the lawn it entered, cutting grass in a swath 1m wide, until it exits the lawn on the other side. The lawnmower's height can be set only when it is not on the lawn.

Alice and Bob have a number of various patterns of grass that they could have on their lawn. For each of those, they want to know whether it's possible to cut the grass into this pattern with their new lawnmower. Each pattern is described by specifying the height of the grass on each 1m x 1m square of the lawn.

The grass is initially 100mm high on the whole lawn.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case begins with a line containing two integers: **N** and **M**. Next follow **N** lines, with the *i*th line containing **M** integers **a_{i,j}** each, the number **a_{i,j}** describing the desired height of the grass in the *j*th square of the *i*th row.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is either the word "YES" if it's possible to get the x-th pattern using the lawnmower, or "NO", if it's impossible (quotes for clarity only).

Limits

1 ≤ T ≤ 100.

Small dataset

1 ≤ N, M ≤ 10.
1 ≤ a_{i,j} ≤ 2.

Large dataset

1 ≤ N, M ≤ 100.
1 ≤ a_{i,j} ≤ 100.

Sample

Input	Output
3	Case #1: YES
3 3	Case #2: NO
2 1 2	Case #3: YES
1 1 1	
2 1 2	
5 5	
2 2 2 2 2	
2 1 1 1 2	
2 1 2 1 2	
2 1 1 1 2	
2 2 2 2 2	
1 3	
1 2 1	

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