

A simple undirected graph is an ordered pair $G = (V, E)$ where V is a non-empty set of vertices, and E is a set of unordered pairs (u, v) where u and v are in V and $u \neq v$. If S is a set, define $|S|$ as the size of S . An incidence matrix M is a $|V| \times |E|$ matrix where $M(i, j)$ is 1 if edge j is incident to vertex i (edge j is either (i, u) or (u, i)) and 0 otherwise.

Given an $n \times m$ matrix, can it be an incidence matrix of a simple undirected graph $G = (V, E)$ where $|V| = n$ and $|E| = m$?

Input

The first line of the input contains an integer t ($1 \leq t \leq 41$), the number of test cases.

Each test case starts with a line with two integers n ($1 \leq n \leq 8$) and m ($0 \leq m \leq n(n-1)/2$). Then n lines containing m integers (0's or 1's) each follow such that the j -th number on the i -th line is $M(i, j)$.

Output

For each test case print 'Yes' if the incidence matrix given in the input can be an incidence matrix of some simple undirected graph, otherwise print 'No'.

Sample Input

```
3
3 3
1 1 0
0 1 1
1 0 1
3 1
1
1
0
3 3
1 1 0
1 1 1
1 0 0
```

Sample Output

```
Yes
Yes
No
```