

# Jungle Joint

## Problem ID: junglejoint

The apes just moved to a rectangle jungle, which can be modelled as a board consisting of  $n$  rows and  $m$  columns. Its rows are numbered from 1 to  $n$  from North to South, and its columns are numbered from 1 to  $m$  from West to East. The cell on the  $r$ -th row and the  $c$ -th column is denoted as  $(r, c)$ . On this cell, there is a tree of height  $h_{r,c}$ .

The apes want to choose some cell as their house. To navigate between trees conveniently, they want all trees on the same row or on the same column as their house to have the same height as the tree on their house.

More formally, if the apes choose the cell  $(i, j)$  to be their house, the following condition must hold: For every cell  $(x, y)$ , if  $(i - x) \cdot (j - y) = 0$ , then  $h_{i,j} = h_{x,y}$ .

Given the size of the jungle and the heights of all trees, find the number of cells the apes can choose as their house.

### Input

The first line contains an integer  $t$  — the number of test cases. Then  $t$  test cases follow.

The first line of each test case contains two integers  $n$  and  $m$  ( $1 \leq n, m \leq 1000$ ) — the size of the rectangle jungle.

On the next  $n$  lines, the  $i$ -th one contains  $m$  integers  $h_{i,1}, h_{i,2}, \dots, h_{i,m}$  ( $1 \leq h_{i,j} \leq 10^9$ ) — the heights of the trees.

It is guaranteed that the sum of  $n$  over all test cases does not exceed 1 000, and the sum of  $m$  over all test cases does not exceed 1 000.

### Output

For each test case, print an integer — the number of cells that the apes can choose as their house.

## Explanation of the samples

In the first test case, there is only one tree in the jungle. The apes can use that tree, as there is not any other tree in the jungle, so their requirement is still fulfilled.

In the second test case, the apes can choose cells (2, 1) and (2, 3).

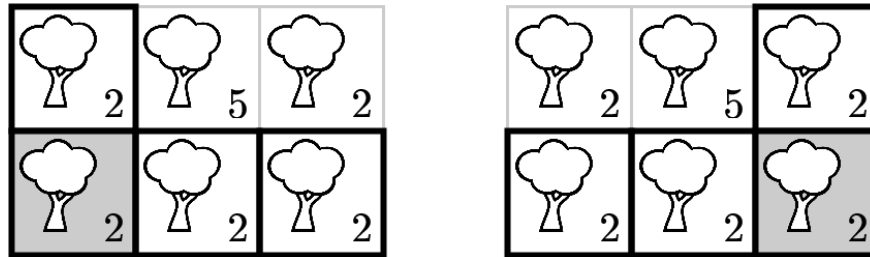


Figure 1: The chosen cells are colored gray. The cells that has the same row or column with the chosen cell has thicker border.

In the third test case, every tree in the jungle has the same height, so the apes can choose whichever they want.

### Sample Input 1

```
3
1 1
10
2 3
2 5 2
2 2 2
3 3
1 1 1
1 1 1
1 1 1
```

### Sample Output 1

```
1
2
9
```