

Collisions

Problem Code: LCOLLIS

Once **N** boys and **M** girls attended a party. You are given a matrix **A** of **N** rows and **M** columns where **A_{ij}** is **1** if the **i-th** boy likes the **j-th** girl, otherwise it will be 0. Note that it is not necessary that if a boy **x** likes girl **y**, then girl **y** should like boy **x**.

You know that if there are two different boys **x** and **y**, who both like girl **z**, then there will be a collision. Can you calculate the number of different collisions at this party? Note that order of boys in the collision doesn't matter.

Input

The first line contains a single integer **T** denoting the number of test cases. Then **T** test cases follow.

The first line of each test case contains two space separated integers **N**, **M** denoting the number of boys and girls, respectively.

Each of the following **N** lines contain **M** characters, each of them is either '**0**' or '**1**'.

Output

For each test case output a single line containing an integer corresponding to the number of collisions at the party.

Constraints

- $1 \leq T \leq 100$
 - $1 \leq N, M \leq 10$
-

Example

Input:

```
2
4 3
111
100
110
000
2 2
10
```

01

Output :

4

0

Explanation

Example Case 1. All three boys like the first girl, so there are **(1, 2, 1), (1, 3, 1), (2, 3, 1)** collisions with her. Boys **1** and **3** both like the second girl so this is one more collision. Only one boy likes the third girl, so there are no collisions with her and thus we have **4** collisions total.

Example Case 2. For each girl there is only one boy who likes her, so there are no collisions at all.