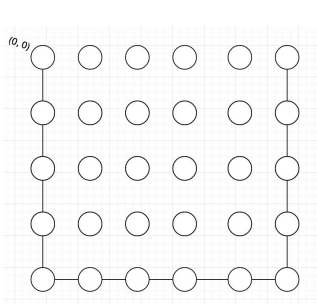
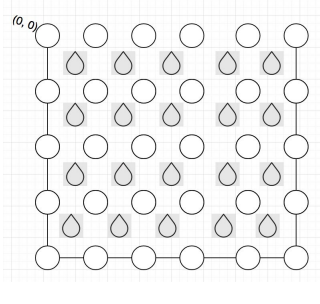


Climate change is real, it will affect all of us sooner or later. This problem is about saving water and you will be a climate hero if you can solve it.

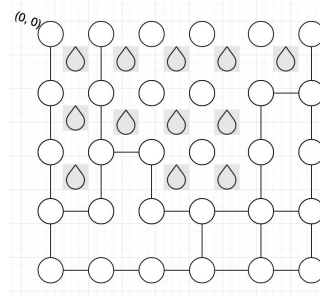
We have a  $N * M$  matrix. Consider every cell of the matrix as a dot. The top left corner is represented by  $(0, 0)$ . Initially it looks something like picture 1.



**Picture 1**



**Picture 2**



**Picture 3**

In picture 1, all the sides of the matrix are enclosed by straight lines except the top. That is because we want to collect water inside the matrix!

Imagine it's continuously raining outside and the water falling from the top of the matrix. Every square sized area surrounded by four dots can contain precisely one unit of water. The distance between every cell is equal. If we pour water in the matrix of Picture 1, it will look something like Picture 2. This matrix contains 20 units of water.

Now some of the cells of the matrix can also be connected by straight lines too, as you can see in Picture 3. As the water can't go through these lines, this matrix is only able to contain 12 units of water.

Now your task is simple. Given the matrix, find the amount of water it can hold. You can assume that the left, bottom, and right sides of the matrix will always be enclosed. Imagine the matrix is in a vacuum, that is once water is inside it will flow in all directions without considering factors like air pressure.

## Input

The first line contains an integer **T**, denoting the number of test cases.

The first line of each case contains two integers **N** and **M**, denoting the size of the matrix.

Next there are  $n$  lines, each containing  $m$  characters denoting the matrix.  $matrix[i][j]$  will contain exactly one of the four characters '**N**', '**R**', '**D**', '**B**'.

'R' means the cell is connected to the cell on the right, 'D' means the cell connected to the cell underneath, 'B' means the cell is connected to both right and bottom. 'N' means no connection.

## Constraints

- $1 \leq T \leq 100$
- $2 \leq N, M \leq 100$

## Output

For each case, print the case number and the number of droplets the matrix contain.

### Sample Input

### Output for Sample Input

2	Case 1: 9
4 5	Case 2: 12
DDDND	Case 3: 7
DBNND	
BDBRD	
RRRRN	
5 6	
DDNNND	
DDNNBD	
DBDNDD	
BNRBBD	
RRRRRN	
4 4	
BBDD	
DDDD	
DRND	
RRRN	