Problem F - Facing Rook Balloons

There are still too many balloons, so David has come up with a way of playing chess with the balloons.

Instead of actually playing chess, he want's to know how many ways he can put down rooks on a $n \times n$ chessboard such that no two rooks are attacking each other.

Input

The first line contains a single integer T the number of test cases.

A test case begins with an integer n ($1 \leq n \leq 100$) denoting the number of rows and columns of the board. An $n \times n$ grid of characters follows (n characters each line on the next n lines).

An `X` denotes a pawn on the chess board, and a `.` denotes an empty space.

A rook on a chessboard can attack any piece in the same row or column that isn't blocked by a pawn.

Output

For each test case, output an integer representing the maximum number of rooks that can be placed on the board such that no two rooks are attacking each other.

Sample Input

```
2
1
X
5
X....
X....
..X..
.X...
....X
```

Sample Output

```
0
7
```

Sample Explanation

In the first test case, no rooks can be put down.

In the second test case, this is one such optimal positioning of the rooks, if we let `I` denote the rooks.

```
X.I..
X..I.
.IX.I
IXI..
.I..X
```