Problem J
Lunar Crystal
Time Limit: 1 second

In the Mid-Autumn Festival, there are a lot of attractions and games. Quinlan is playing the game Lunar Crystal. This is actually a treasure hunt game and it is very easy:

Given a 2D grid of size $M \times N$, with cells with Lunar Crystal (denoted by '.') or cells with bombs (denoted by 'x'). Quinlan can start at any cell that contains no bomb; and at a cell he can move in any of the directions, north, west, south or east, if the destination cell contains no bomb.

He can pass through any cell only once. Quinlan has to visit and collect all Lunar Crystal in order to win. Please compute the number of all possible routes.

Routes are considered different even when: (i) same starting cell, different traversal paths; or (ii) same traversal path, different starting cells.

Input

The input consists of multiple test cases.

The first line of input contains an integer T $(1 \le T \le 30)$, the number of test cases.

Each test case starts with a line containing two integers, M and N $(1 \le M \le 100, 1 \le N \le 8)$. Each of the next M lines contain a string of N characters describing the configuration of the grid. 'x' denotes a cell with bombs and '.' denotes a cell with Lunar Crystal.

Output

For each test case, print one line containing the total number of possible routes for the corresponding case. As this number can be quite large, it should take modulo 500 000 003.

Sample Input	Sample Output
2 2 2 xx .x 2 2 x. ..	1 2