Problem 6 - Tetriz

You love to play the most popular game **Tetriz**. Tetriz is a board game with a $n \times m$ grid board, and three kinds of polyominoes: 1×1, 1×2, and 2×2. Some cells of the board are forbidden cells, and the other cells are free cells. The goal of Tetriz is to fill all free cells with polyominoes, and you can rotate polyominoes as you like. But just filling the board is too easy for you. You are curious about the number of ways to achieve the goal. Since the answer may be very large, please output this number modulo $10^9 + 7$.

Input Format

The first line contains a integer T indicating the number of test cases. Each test case starts with a line containing two integers n, m, specifying the size of the board. The next n lines describe the board. Each line contains m characters. The character '`.`' denotes a free cell, and the character '`X`' denotes a forbidden cell.

- $1 \leq T \leq 10$
- $1 \leq n, m \leq 15$

Output Format

For each test case, please output the number of ways modulo $10^9 + 7$.

Sample Input

```
5
1 1
.
1 7
X..X..X
1 4
....
2 2
..
..
3 5
X...X
.....
X...X
```

Sample Output

```
1
4
5
8
282
```