Brick Tiling

You are given a grid having N rows and M columns. A grid square can either be blocked or empty. Blocked squares are represented by a '#' and empty squares are represented by '.'. Find the number of ways to tile the grid using L shaped bricks. A L brick has one side of length three units while other of length 2 units. All empty squares in the grid should be covered by exactly one of the L shaped tiles, and blocked squares should not be covered by any tile. The bricks can be used in any orientation (they can be rotated or flipped).

Input:
The first line contains the number of test cases T. T test cases follow. Each test case contains N and M on the first line, followed by N lines describing each row of the grid.

Output:
Output the number of ways to tile the grid. Output each answer modulo 1000000007.

Constraints:
$1 <= T <= 50$
$1 <= N <= 20$
$1 <= M <= 8$
Each grid square will be either '.' or '#'.

Sample Input:

```
3
2 4
....
....
3 3
...
.#.
...
2 2
##
##
```

Sample Output:

```
2
4
1
```

NOTE:
If all points in the grid are blocked the number of ways is 1, as in the last sample testcase.