Fairy Chess

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You have a *NxN* chessboard. An S-leaper is a chess piece which can move from square *(x1,y1)* to any other square *(x2,y2)* if *abs(x1-x2) + abs(y1-y2) <= S*, where *abs(x)* refers to the absolute value of *x*. The chess board may also contain some pawns. The leaper cannot land on the same square as a pawn. In how many ways can a leaper move M times on the board?

Input:
The first line contains the number of test cases *T*. *T* cases follow. Each case contains integers *N*, *M* and *S* on the first line. The next *N* lines contains *N* characters each. The *ith* character on the *jth* line is a '.' if the corresponding chess square is empty, *'P'* if there is a pawn, or *'L'* if the leaper is situated on that square.

Output:
For each case, output the number of ways the leaper can make *M* moves. Output each answer modulo 1000000007.

Constraints:
1 <= *T* <= 10
1 <= *S* <= *N* <= 200
1 <= *M* <= 200
There will be exactly one *'L'* character on the board.

Sample Input:

```
3
4 1 1
....
.L..
.P..
....
3 2 1
...
...
..L
4 3 2
....
...L
..P.
P...
```

Sample Output:

```
4
11
385
```

Explanation:
For the first case, the leaper can jump to any of the 4 adjacent squares, except the square below. It can also remain at its position. Thus there are 4 ways to make 1 move.