

## Problem D: The Block

A block with dimensions  $1 \times 1 \times 2$  initially sits on a grid. Your task is to rotate the block around the grid using legal moves, and finish with the block sitting end-up on the unique marked square on the grid.

The grid is given to you in the following format:

. represents a valid square

# represents an invalid square

X represents the goal square. The grid is guaranteed to have exactly one of these. This square is also a valid square.

C represents the starting location of the block. The grid is guaranteed to have exactly two of these, and they will be adjacent. These are both valid squares.

The only way to move the block is to roll the block up/down/left/right, or tip the block up/down/left/right. Not all these options are necessarily legal, though, as the block is never allowed to rest on the grid on an invalid square or move outside the grid.

You complete the challenge if you can get the block to touch the grid with only one of its faces (it's sitting end-up) and the square that it's on is the square marked with the X. If it's possible, how many moves does it take?

### Input Specification:

The input begins with an integer  $T$ , the number of test cases. Each test case begins with two space-separated integers  $R$ , the number of rows, and  $C$ , the number of columns. Following this are  $R$  lines of  $C$  characters each, according to the description above.

### Output Specification:

For each test case, if there is a route to get the block vertical on the marked square, you should output the minimum number of moves required to do so. Otherwise, output IMPOSSIBLE.

### Sample Input:

```
1
5 5
CC###
.X.##
#..##
#..##
#####
```

### Sample Output:

```
5
```

