DWITE '08 R4 #5 - Blow your mind with 4th D

Time limit: 1.0s **Memory limit:** 64M

DWITE Online Computer Programming Contest, January 2008, Problem 5

This should be fun – this is another one of the *maze* questions, but this round it's set in 4D. *Woah!* Alright, don't freak out – the depth is a constant 1, so you could think of it as a typical 2D maze that changes over time.

Each maze is a static 5×5 and uses pound signs `#` for walls and periods `.` for empty spaces. `A` for start, `B` for exit. Each time a step is made, the maze changes to the next frame, as specified in the input file. The valid directions are up/down, left/right + staying in place (skip to next frame); as long as there is no wall in space being moved to, in the next frame. Here's an example of a 2×2 maze:

```
4 frames
A# #. #. ##
## ## ## #B
```

The solution is: right, wait, down. Notice how in the first and last steps the maze closes down, forcing a move, while on the 2nd one must wait for a new path to open up. The entire maze expires as the frames end, so $4 - 1 = 3$ is the maximum number of steps to a solution.

The input will contain 5 sets. The first line will specify the number of frames to a maze $1 \leq N \leq 25$. The next $5N$ lines will describe N frames of the maze, as explained above.

The output file will contain 5 lines – the shortest path from `A` to `B`.

Sample Input

```
7
#####
##.##
A...B
#####
#####
#####
##.##
#...B
#####
#####
#####
##.##
##..B
#####
#####
#####
##.##
#####
#####
#####
#####
##.##
....B
#####
#####
#####
##.##
....B
#####
#####
#####
##.##
....B
#####
#####
3
#####
#####
##A##
#####
#####
#####
#...#
#.#.#
#...#
```

```
#####
#####
#####
##B##
#####
#####
```

Sample Output

```
6
2
```

Problem Resource: DWITE