

2782 - Super Mario

Description

Little David is playing Super Mario, your favorite game. As he knows all levels by heart what he wants is really to pass them in a new best time.

A level consists of a board of **N** rows and **N** columns where each cell may be one of the following characters:

- '.' A free place where Mario can move.
- '*' A wall that obstructs the passage.
- 'm' The initial position of Mario.
- '#' The goal.

Game rules:

- Move toward a cell takes one time unit.
- Mario can only walk in horizontal and vertical direction.

Since David is so good at playing there are levels that has already passed in the shortest possible time and therefore can not be improved their times. To not play in vain he asks you to help him to determine the minimum time that can pass each level.

Input specification

The first line of input is an integer **N** ($2 \leq N \leq 10$), the board size. Then come **N** lines each with **N** characters, those described above. The characters 'm' and '#' will appear exactly once. All inputs are valid.

Output specification

Print a line with an integer indicating the minimum time that can be passed the level. If Mario can not reach the goal print -1.

Sample input

```
5
m . . . .
. . . . .
. * * * *
. . . . .
. . . . #
```

Sample output

8

Hint(s)

Source	Nelson González Peñate
Added by	ymondelo20
Addition date	2014-03-25
Time limit (ms)	15000
Test limit (ms)	1500
Memory limit (kb)	130000
Output limit (mb)	64
Size limit (bytes)	15000
Enabled languages	Bash C C# C++ Java Pascal Perl PHP Python Ruby Text