<code_eval>

CHALLENGES

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LIGHTS OUT

SPONSORING COMPANY:

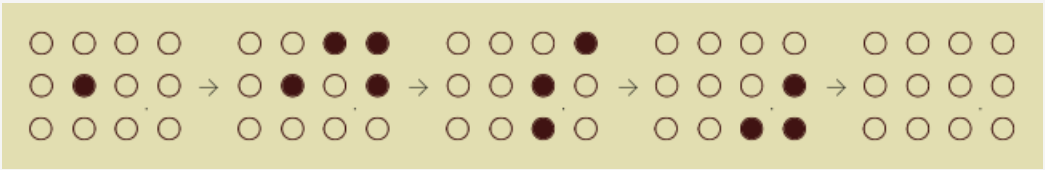
CHALLENGE DESCRIPTION:

Bob operates all electronic lights at the circus. Lately, there is a defective circuit board that is causing him some problems. The circuit board controls a rectangular box filled with N by M lights, which each may be on or off depending on the lighting needs of the performers.

However, each time he presses the button to toggle a particular light on or off, the circuit board toggles not only that light, but also the lights above, below, to the left, and to the right of the light.

O = light is on . = light is off

Example:



toggle lights as follows: row 1, column 4; row 2, column 3; row 2, column 4; and row 3, column 4

Bob needs to turn off all the lights. Write a program that prints the minimum number of times he must press a button on the board so that all the lights turn off, or -1 if it is not possible.

INPUT SAMPLE:

The input begins with two integers on a line, N and M (1 <= N,M <= 10), separated by a space. Then, N light box row follow, separated by pipe. Each row has M characters either '.' or 'O', indicating a light that is current off or a light that is currently on, respectively.

```
4 10 ...OOOOOOO|.OO.O.O...|.OO..OO.OO|...O....O.
3 3 ..O|OOO|OOO
5 7 .O.O...|..O.O..|.O.O..O|.O..OOO|OO.OOOO
```

OUTPUT SAMPLE:

For each test case print a line containing the minimum number of clicks that will turn off all the lights, or -1 if it is not possible to turn off all the lights.

```
19
2
-1
```

CONSTRAINTS:

1. Number of test cases is equal to 20.

LOGIN TO SUBMIT SOLUTION