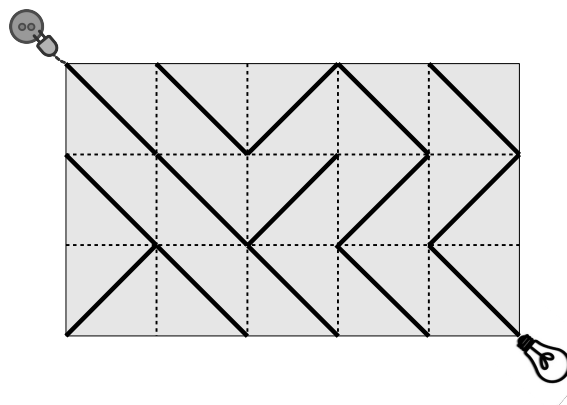


Switch the Lamp On

Casper is designing an electronic circuit on a $N \times M$ rectangular grid plate. There are $N \times M$ square tiles that are aligned to the grid on the plate. Two (out of four) opposite corners of each tile are connected by a wire.

A power source is connected to the top left corner of the plate. A lamp is connected to the bottom right corner of the plate. The lamp is on only if there is a path of wires connecting power source to lamp. In order to switch the lamp on, any number of tiles can be turned by 90° (in both directions).



In the picture above the lamp is off. If any one of the tiles in the second column from the right is turned by 90° , power source and lamp get connected, and the lamp is on.

Write a program to find out the minimal number of tiles that have to be turned by 90° to switch the lamp on.

Input

The first line of input contains two integer numbers N and M , the dimensions of the plate. In each of the following N lines there are M symbols – either \backslash or $/$ – which indicate the direction of the wire connecting the opposite vertices of the corresponding tile.

Output

There must be exactly one line of output. If it is possible to switch the lamp on, this line must contain only one integer number: the minimal number of tiles that have to be turned to switch on the lamp. If it is not possible, output the string: NO SOLUTION



Constraints

$1 \leq N, M \leq 500$.

In test cases worth 40 points, $1 \leq N \leq 4$ and $1 \leq M \leq 5$.

Example

Input	Output
3 5 \\/\\ \\/\/ /\\/\	1

The example input corresponds to the picture.