

Výberové sústredenie pred IOI

8.5. – 14.5. 2006

Puzzle Chmapionship (Ne21)

Input File: stdin
Output File: stdout
Source Code: puzzle.pas/.c/.cpp

35 points
Time limit: 1 s
Memory limit: 64 MB

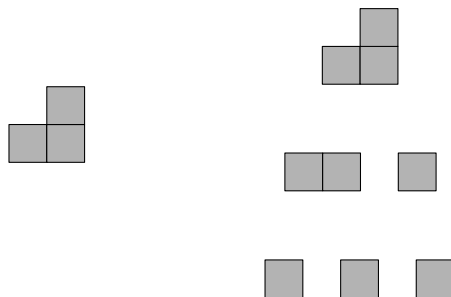
Eric has just returned from Flatland Puzzle Championship. One of the most challenging puzzles suggested was the following.

Recall that a polyomino is a 4-connected set of squares on a grid. Two polyominoes are considered the same if one can be transformed to another by rotation and/or flipping.

Task

You are given a polyomino and have to split it to a set of one or more polyominoes. The task is to find the number of ways to do it.

For example, there are three ways to split polyomino on the left picture to smaller polyominoes. These ways are shown on the right picture.



Input

The size of the source polyomino doesn't exceed 2×3 . It is described with two lines of three characters each. Each character is either '*' or '.'.

Output

Output one integer number — the number of ways to split the source polyomino.

Example

Input

.*.
**.

Output

3