

Ground Game

Filename: *game*

Time Limit: *1 second*

In the game Ground Game, a player can press one of four keys:

- > to move right (greater than)
- < to move left (less than)
- ^ to move up (carrot)
- v to move down (lowercase v)

At the beginning of the game, a player starts at the ground level. When he moves left or right, he stays at the same level. If he moves down, he moves underground one more level. If he moves up, he moves one level up towards the ground. He can never move higher than the ground level and never tries to do so, but he can move at the ground level as much as he likes.

The Problem

Given a full list of key presses by a player, determine the maximum number of levels below ground he moved during the game.

The Input

The first line of input will consist of a single positive integer, n ($n \leq 100$), representing the number of input cases to process. The input cases follow, one per line. Each input case is a string of in between 1 and 100, characters, each from the set $\{ '>', '<', '^', 'v' \}$. It is guaranteed that no input string will give directions that would move the player higher than the ground level.

The Output

For each input case, output a single integer on a line by itself representing the maximum number of levels below the ground level the player for the input case traveled in the game.

Sample Input

```
2
>>>vvvvvvv<<^^>vvv^^>>>
>>>><<<<<<>>>>><
```

Sample Output

```
7
0
```