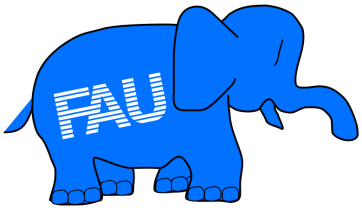
Problem F: Little Elephant

After the galactic empire has been defeated, a lot of rebels who previously spent their whole time fighting the empire had to look for a new profession. Gardeners and zookeepers were particularly interesting and relaxing professions for many of them.



Little eleFAUnt has garden. You help!
Image is public domain, based on
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Former rebel Jan is doing both: He bought a farm on the planet Anobis, and is taking care of a lot of animals. For his special favourite, the little elephant Karl, Jan built an entirely new garden, consisting of some trees (that bear some tasty fruits for his elephant) and a few fences. After Jan let the little elephant enter the garden, he noticed that not all of the trees can be reached by the little elephant.

You are given a map of the garden, consisting of the following symbols:

- `#` symbols a fence. As the little elephant is still quite small, he cannot cross fences
- `.` is grass. The little elephant can walk freely over it
- `E` is the current position of the elephant
- `*` is one of the trees the elephant is trying to reach. The trees are high, and the elephant can easily walk beneath them.

Help Jan to find out how many of the trees can be reached starting from the current position of the little elephant. While walking, the little elephant can do steps to the left, right, up and down, but not diagonally, thus he cannot cross diagonal fences (see the third sample input).

Input

The first line contains two integers H and W ($1 \leq H, W \leq 100$), the height and the width of the following map of the garden. H lines follow, each containing W characters describing the garden with the symbols explained above. The character `E` occurs exactly once per input file.

Output

A single integer, the number of trees that the little elephant can reach from his current position.

Sample Input 1

```
5 5
#####
#.**#
#.E*#
#*..#
#####
```

Sample Output 1

```
4
```

Sample Input 2

```
4 5
*....
.....
.E...
....*
```

Sample Output 2

```
2
```

Sample Input 3

```
3 3
#**
.#*
E.#
```

Sample Output 3

```
0
```