



## Periodic Strings

Define a *k*-periodic string as follows:

A string *s* is *k*-periodic if the length of the string  $|s|$  is a multiple of *k*, and if you chop the string up into  $|s|/k$  substrings of length *k*, then each of those substrings (except the first) is the same as the previous substring, but with its last character moved to the front.

For example, the following string is 3-periodic:

**abccabbcaabc**

The above string can break up into substrings **abc**, **cab**, **bca**, and **abc**, and each substring (except the first) is a right-rotation of the previous substring (**abc** → **cab** → **bca** → **abc**).

Given a string, determine the smallest *k* for which the string is *k*-periodic.

### Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs. The single line of input contains a string *s* ( $1 \leq |s| \leq 100$ ) consisting only of lowercase letters.

### Output

Output the integer *k*, which is the smallest *k* for which the input string is *k*-periodic.

Sample Input	Sample Output
aaaaaaaa	1
abbaabbaabba	2
abcdef	6
abccabbcaabc	3