

Given two strings  $a$  and  $b$  we define  $a * b$  to be their concatenation. For example, if  $a = \text{'abc'}$  and  $b = \text{'def'}$  then  $a * b = \text{'abcdef'}$ . If we think of concatenation as multiplication, exponentiation by a non-negative integer is defined in the normal way:  $a^0 = \text{''}$  (the empty string) and  $a^{(n+1)} = a * (a^n)$ .

## Input

Each test case is a line of input representing  $s$ , a string of printable characters. The length of  $s$  will be at least 1 and will not exceed 1 million characters. A line containing a period follows the last test case.

## Output

For each  $s$  you should print the largest  $n$  such that  $s = a^n$  for some string  $a$ .

## Sample Input

```
abcd  
aaaa  
ababab  
.
```

## Sample Output

```
1  
4  
3
```

