

10298 Power Strings

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
```

