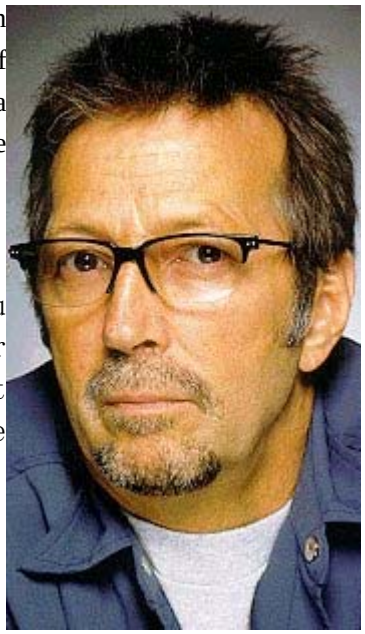
Problem D: Power Strings



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

Each test case is a line of input representing *s*, a string of printable characters. For each *s* you should print the largest *n* such that *s = a^n* for some string *a*. 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.

Sample Input

```
abcd
aaaa
ababab
.
```

Output for Sample Input

```
1
4
3
```