B - Power Strings

Source file name: `power.c`, `power.cpp`, *or* `power.java`

Given two strings *a* and *b* we define *ab* to be their concatenation. For example, if *a* is `abc` and *b* is `def`, then *ab* is `abcdef`.

If we think of concatenation as multiplication, exponentiation by a non-negative integer is defined in the normal way: a^0 is the empty string and a^{n+1} is $a(a^n)$.

Input

Each test case is a line of input representing *s*, a string of printable characters.

A line containing a period follows the last test case.

The input must be read from standard input.

Output

For each *s* you should print the largest *n* such that $s = x^n$ for some string *x*. The length of *s* will be at least 1 and will not exceed 1 million characters.

The output must be written to standard output.

Sample Input	Sample Output
abcd aaaa ababab .	1 4 3