Problem G
String Factoring

Spotting patterns in seemingly random strings is a problem with many applications. E.g., in our efforts to understand the genome we investigate the structure of DNA strings. In data compression we are interested in finding repetitions, so the data can be represented more efficiently with pointers. Another plausible example arises from the area of artificial intelligence, as how to interpret information given to you in a language you do not know. The natural thing to do in order to decode the information message would be to look for repetitions in it. So if the SETI project (the Search for Extra Terrestrial Intelligence) ever get a signal in the H21-spectra, we need to know how to decompose it.

One way of capturing the redundancy of a string is to find its factoring. If two or more identical substrings A follow each other in a string S, we can represent this aprt of S as the substring A, enclosed by parentheses, raised to the power of the number of repetitions. E.g., the string $DOODOO$ can be factored as $(DOO)^2$, but also as $(D(O)^2)^2$. Naturally, the latter factoring is considered better since it cannot be factored any further. We say that a factoring is irreducible if it does not contain any consecutive repetition of a substring. A string may have several irreducible factorings, as seen by the example string $POPPOP$. It can be factored as $(POP)^2$, as well as $PO(P)^2OP$. The first factoring has a shorter representation and motivates the following definition. The *weigh* of a factoring equals the number of characters in it, *excluding* the parentheses and the exponents. Thus the weight of $(POP)^2$ is 3, whereas $PO(P)^2OP$ has weight 5. A *maximal* facotring is a factoring with the smallest possible weight. It should be clear that a maximal factoring is always an irreducible one, but there may still be several maximal factorings. E.g., the string $ABABA$ has two maximal factorings $(AB)^2A$ and $A(BA)^2$.

Input

The input consists of a single line, containing a string of at least one, but at most 200 characters from the capital alphabet A-Z.

Output

Output the weight of a maximal factoring of the input string.

Sample Input 1	Sample Output 1
PRATTATTATTIC	6

Sample Input 2	Sample Output 2
GGGGGGGGG	1

Sample Input 3	Sample Output 3
PRIME	5

Sample Input 4	Sample Output 4
BABBABABBABBA	6

Sample Input 5	Sample Output 5
ARPARPARPARPAR	5