

F. Periodic Substring

time limit per test: 3 seconds
memory limit per test: 512 megabytes

Given the string s . Find a maximum integer k such that there is a non-empty substring in the string s that is a concatenation of k equal strings.

Input

The first line of input contains the string s ($1 \leq |s| \leq 400\,000$). The string consists of lowercase English letters.

Output

Print the desired value k .

Examples

input	Copy
aabaabaabaabaab	
output	Copy
4	
input	Copy
aabaabb	
output	Copy
2	
input	Copy
aaaa	
output	Copy
4	
input	Copy
ppppplppp	
output	Copy
5	
input	Copy
nn	
output	Copy
2	

Note

In the first example, a substring that repeats 4 times is "abaa".

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

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