

[HOME](#) [CONTESTS](#) [GYM](#) [PROBLEMSET](#) [GROUPS](#) [RATING](#) [API](#) [AIM TECH ROUND](#)  [VK CUP](#)  [SECTIONS](#)
[PROBLEMS](#) [SUBMIT CODE](#) [MY SUBMISSIONS](#) [STATUS](#) [HACKS](#) [ROOM](#) [STANDINGS](#) [CUSTOM INVOCATION](#)

E. Xenia and String Problem

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Xenia the coder went to The Olympiad of Informatics and got a string problem. Unfortunately, Xenia isn't fabulous in string algorithms. Help her solve the problem.

String s is a sequence of characters $s_1s_2\dots s_{|s|}$, where record $|s|$ shows the length of the string.

Substring $s[i\dots j]$ of string s is string $s_is_{i+1}\dots s_j$.

String s is a *Gray* string, if it meets the conditions:

- the length of string $|s|$ is odd;
- character $s_{\frac{|s|+1}{2}}$ occurs exactly once in the string;
- either $|s| = 1$, or substrings $s[1\dots \frac{|s|+1}{2} - 1]$ and $s[\frac{|s|+1}{2} + 1\dots |s|]$ are the same and are Gray strings.

For example, strings "abacaba", "xzx", "g" are Gray strings and strings "aaa", "xz", "abaxcbc" are not.

The *beauty* of string p is the sum of the squares of the lengths of all substrings of string p that are Gray strings. In other words, consider all pairs of values i, j ($1 \leq i \leq j \leq |p|$). If substring $p[i\dots j]$ is a Gray string, you should add $(j - i + 1)^2$ to the beauty.

Xenia has got string t consisting of lowercase English letters. She is allowed to replace at most one letter of the string by any other English letter. The task is to get a string of maximum beauty.

Input

The first line contains a non-empty string t ($1 \leq |t| \leq 10^5$). String t only consists of lowercase English letters.

Output

Print the sought maximum beauty value Xenia can get.

Please do not use the `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use the `cin`, `cout` streams or the `%I64d` specifier.

Examples

input	
zzz	
output	
12	

input	
aba	
output	
12	

input	
abacaba	
output	
83	

Codeforces Round #207 (Div. 1)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Submit?

Language: GNU G++ 5.1.0

Choose file: 选择文件 未选择任何文件



Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

[Submit](#)

→ Problem tags

dp hashing implementation string suffix structures strings
No tag edit access

→ Contest materials

- Announcement 
- Tutorial 

input
aaaaaa
output
15

Note

In the first test sample the given string can be transformed into string $p = "z\bar{b}z"$. Such string contains Gray strings as substrings $p[1... 1]$, $p[2... 2]$, $p[3... 3]$ и $p[1... 3]$. In total, the beauty of string p gets equal to $1^2 + 1^2 + 1^2 + 3^2 = 12$. You can't obtain a more beautiful string.

In the second test case it is not necessary to perform any operation. The initial string has the maximum possible beauty.

[Codeforces](#) (c) Copyright 2010-2016 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Aug/31/2016 20:30:59^{UTC+8} (c2).
Desktop version, switch to [mobile version](#).