

Beautiful Strings

You are given a string, S , consisting of lowercase English letters.

A string is *beautiful* with respect to S if it can be derived from S by removing *exactly 2* characters.

Find and print the number of different strings that are *beautiful* with respect to S .

Input Format

A single string of lowercase English letters denoting S .

Constraints

- $3 \leq |S| \leq 10^6$
- $3 \leq |S| \leq 20$ holds for test cases worth at least 15% of the problem's score.
- $3 \leq |S| \leq 2000$ holds for test cases worth at least 30% of the problem's score.

Output Format

Print the number of different strings that are *beautiful* with respect to S .

Sample Input

abba

Sample Output

4

Explanation

$S = \{abba\}$

The following strings can be derived by removing 2 characters from S : ab, bb, ba, ab, ba, aa , and bb .

This gives us our set of *unique* beautiful strings, $B = \{ab, ba, aa, bb\}$. As $|B| = 4$, we print 4.