

Incoherent palindrome

Winter Workshops, Day 4, Available memory 512 MB

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You are given the string A of length n , which consists of the lowercase English letters. You have to find the length of the longest palindromic¹ subsequence.

Constraints

- $1 \leq n \leq 2000$
- $A[i] \in [a, b, \dots, z]$

Input

A

Output

In the first line of output, write down one integer, which indicates the length of the longest palindrome.

Examples

Input	Output
abab	3
cdabaeedbabc	8
abbcdca	5
aabbaaaababbabaababb	16

Scoring

Subtask	Constraints	Points
1	$n \leq 20$ and string consists of only letters a and b	10
2	string consists of only letters a and b	30
3	$n \leq 20$	10
4	no additional constraints	50

¹A palindrome is a string which is the same when read both backwards and forwards (kajak)