Adamada

Time limit: 2 sec.
Memory limit: 512MB

Description

Naming is always difficult. When Junhee, Minkyu, Sungsoo, and Jihun was writing an application for KAIST World Friends IT Volunteer, they were stuck in the most difficult problem in the world: their team name. Junhee thought about Ethiopia and ACM-ICPC.

Ethiopia... Addis Ababa... Adama... Ababa...? Adama...? Ababa!

"Ababa is a palindrome," he said. "And Adama is similar to a palindrome! Let's find a palindrome using Adama... That is Adamada!"

If a string is same as the inverted string, it is called palindrome. For example, "ABABA" is a palindrome because when it is inverted it is the same. However, "ADAMA" is not a palindrome because the inverted string is "AMADA".

You are given a string. When you add some characters at any place in the string, you can make a palindrome. Find the minimum length of such palindrome.

For example, given "ABABA", the minimum length is 5 because "ABABA" itself is a palindrome. Given "ADAMA", the minimum length is 7; "ADAMADA", or "AMADAMA".

Input

The first line contains a string. The length of string is between 1 and 1,000 inclusively. The string only contains uppercases: A to Z.

Output

Print the minimum length of palindrome you can make using the string as described, in one line.

Sample I/O

Input(s)	Output(s)
ABABA	5
ADAMA	7