

Expecto Palindronum (200 points)

Introduction

A palindrome is a word that reads the same backward and forward.

Given a string S , you are allowed to convert it to a palindrome by adding 0 or more characters in front of it.

Find the length of the shortest palindrome that you can create from S by applying the above transformation.

Input Specifications

Your program will take

- A string S ($1 \leq \text{Length}(S) \leq 100$) where each character of S will be a lowercase alphabet (Between 'a' to 'z')

Output Specifications

For each input, print out an integer L denoting the length of the shortest palindrome you can generate from S .

Sample Input/Output

Input

baaa

Output

7

Explanation

The shortest palindrome you can construct from 'baaa' is 'aaabaaa'.