ECOO '16 R2 P1 - Palindrome Panic

Time limit: 2.5s   **Memory limit:** 256M

A palindrome is a word that has the exact same sequence of letters when read forwards or backwards. The words `noon` and `radar` **are** palindromes, whereas the words `noob` and `palindrome` are **not**.

Patty loves palindromes, as she finds them soothing. Patty knows that you can turn any word into a palindrome by adding letters to the left and / or right. For example, you can turn `ECOO` into `OOCECOO` or `ECOOCE` or even `DOOCECOOD`. Patty loves palindromes so much that any time she sees a word written down somewhere, she immediately converts it to a palindrome in her head.

The input will contain 10 test cases. Each test case consists of a single line containing a string of lowercase characters of maximum length of 10^6. Your code should output the minimum number of letters Patty would need to add to the left and / or the right in order to convert the string to a palindrome.

Note that the sample input below contains only 3 test cases but the actual data files will contain 10.

Sample Input

```
ecoo
impala
anagram
```

Sample Output

```
2
3
4
```

Question Development Team

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