

Palindrome Index



Given a string, S , of lowercase letters, determine the index of the character whose removal will make S a palindrome. If S is already a palindrome or no such character exists, then print -1 . There will always be a valid solution, and any correct answer is acceptable. For example, if $S = "bcbcb"$, we can either remove 'b' at index 0 or 'c' at index 3 .

Input Format

The first line contains an integer, T , denoting the number of test cases.

Each line i of the T subsequent lines (where $0 \leq i < T$) describes a test case in the form of a single string, S_i .

Constraints

- $1 \leq T \leq 20$
- $1 \leq |S| \leq 10^5 + 5$
- All characters are lowercase English letters.

Output Format

Print an integer denoting the *zero-indexed* position of the character that makes S not a palindrome; if S is already a palindrome or no such character exists, print -1 .

Sample Input

```
3
aaab
baa
aaa
```

Sample Output

```
3
0
-1
```

Explanation

Test Case 1: "aaab"

Removing 'b' at index 3 results in a palindrome, so we print 3 on a new line.

Test Case 2: "baa"

Removing 'b' at index 0 results in a palindrome, so we print 0 on a new line.

Test Case 3: "aaa"

This string is already a palindrome, so we print -1 ; however, 0 , 1 , and 2 are also all acceptable answers, as the string will still be a palindrome if any one of the characters at those indices are removed.

Note: The custom checker logic for this challenge is available [here](#).