Problem H
String to Palindrome

Input: Standard Input
Output: Standard Output
Time Limit: 1 Second

In this problem you are asked to convert a string into a palindrome with minimum number of operations. The operations are described below:

Here you'd have the ultimate freedom. You are allowed to:
- Add any character at any position
- Remove any character from any position
- Replace any character at any position with another character

Every operation you do on the string would count for a unit cost. You'd have to keep that as low as possible.

For example, to convert "abccda" you would need at least two operations if we allowed you only to add characters. But when you have the option to replace any character you can do it with only one operation. We hope you'd be able to use this feature to your advantage.

Input

The input file contains several test cases. The first line of the input gives you the number of test cases, **T (1≤T≤10)**. Then **T** test cases will follow, each in one line. The input for each test case consists of a string containing lower case letters only. You can safely assume that the length of this string will not exceed **1000** characters.

Output

For each set of input print the test case number first. Then print the minimum number of characters needed to turn the given string into a palindrome.

Sample Input

Sample Input	Output for Sample Input
6	Case 1: 5
tanbirahmed	Case 2: 7
shahriarmanzoor	Case 3: 6
monirulhasan	Case 4: 8
syedmonowarhossain	Case 5: 8
sadrulhabibchowdhury	Case 6: 8
mohammadsajjadhossain	

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