

Wise owl has got a string  $S$  with  $N$  ( $1 \leq N \leq 10^5$ ) characters. All the characters of  $S$  are lowercase English letters. Now she challenges Fallen to find out a string  $T$  of length  $N$  such that the length of the **LCS** (Longest Common Subsequence) of  $S$  and  $T$  is minimum.  $T$  also should be consisted of lowercase English letters only.

Now it is Fallen's problem to find out the string  $T$ . But you need to print the minimum length of such LCS given that Fallen has found  $T$  correctly.

## Input

Input file starts with a single integer  $T$  ( $1 \leq T \leq 50$ ),  $T$  test cases following. Each of the next  $T$  test cases has one string  $S$  on a line.

## Output

For each case print your output in format, 'Case  $X$ :  $Y$ ', on a single line where  $X$  denotes the case number starting from 1 and  $Y$  denotes the length of the shortest possible LCS.

## Sample Input

```
2
ab
efzadeuopqxrvtwaxghijklmnbcastbqy
```

## Sample Output

```
Case 1: 0
Case 2: 1
```