1044 – Palindrome Partitioning

A palindrome partition is the partitioning of a string such that each separate substring is a palindrome.

For example, the string **"ABACABA"** could be partitioned in several different ways, such as **{"A","B","A","C","A","B","A"}, {"A","BACAB","A"}, {"ABA","C","ABA"}, or {"ABACABA"},** among others.

You are given a string **s**. Return the minimum possible number of substrings in a palindrome partition of **s**.

Input

Input starts with an integer **T (≤ 40)**, denoting the number of test cases.

Each case begins with a non-empty string **s** of uppercase letters with length no more than **1000**.

Output

For each case of input you have to print the case number and the desired result.

Sample Input	Output for Sample Input
3 AAAA ABCDEFGH QWERTYTREWQWERT	Case 1: 1 Case 2: 8 Case 3: 5