Application type of questions

Strings

1. Tina Loves A

Tina has a string S. She really likes the letter a. She calls a string good if strictly more than half of the characters in that string are a ' s. For example "aaacb", "acaa" are good strings, and "baba", "abbba", " "(empty string) are not.
Tina can erase some characters from her string S. She would like to know what is the length of the longest string remaining after erasing some characters (possibly zero) to get a good string. It is guaranteed that the string has at least one a in it, so the answer always exists.

Input format

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

Each test case consists of a string S containing only lowercase characters.

Output format

For each test case on a new line, print the length of longest good string.

Question 2:

We all know Chatur and Rancho from 3 idiots. Rancho got Chatur exam paper, but since he is a prankster, he decided to meddle with the words present in the paper. He changes all the words in the paper into palindromes.

To do this, he follows two rules:

1. In one operation he can only reduce the value of an alphabet by1, i.e he can change d to c, but he cannot change c to d or d to b

2. The alphabet a will not be reduced any further.

Each reduction in the value of any alphabet is counted as a single operation.

Find the minimum number of operations required to convert a given string into a palindrome.

Input format

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

Each test case consists of a string S containing only lowercase characters with no spaces.

Output format

For each test case on a new line, print the minimum number of operations for the corresponding test case

Question 3:

Anagram or Not

A string T is said to be an anagram of a string S if it is created by rearranging the characters which are present in string S .

PrepBuddy has a string S and Tina has a string T, they want to know whether S and T are an anagram of each other or not.

Input format

The first line contains an integer N, representing the number of test cases.

Each test case contains two strings S and T separated by a line.

Output format

For each test case on a new line, print `YES` if S and T are an anagram of each other else print `NO`.

Question 4:

Find Substring

A substring is a contiguous sequence of characters within a string.

PrepBuddy gave you two string s and t and ask you to check if the string is a substring of or not. If string t is a substring of s then print "YES" otherwise Print "NO" without quotes.

Example: s=prepbytes, t=prep
here-string t is a Substring of string s.

Note: Both string contains lowercase English letters

Input Format

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

Each test-cases contains two string s and t.

Output

If string t is Subtring of string s then print "YES" otherwise Print "NO" without quote.

Question 5

First character

Prepbuddy has a string S consisting of lowercase Latin Letters. The String S can contain some repeated characters, no repeated characters, and maybe all repeated characters. He is trying to find the first character which is non-repeating in S. The String S contains many non-repeating characters, so he is not able to find the answer. You can help him to find the answer.

Note:- Print −1 if there is no non-repeating character.

Input Format

The first line contains T denoting the number of test cases. Then following each test case, the next line contains the string S.

Output Format

For each test case, print the index of the first non-repeating character present in the string. Print −1,if there is no non-repeating character.

Input example:

hello

zxvczbtxyzvy

Sample test case Explanation

In the first test case.

'h', 'e', and 'o' are non-repeating characters, but the character 'h' is the first non-repeating.

So the answer is the index of 'h'.

Output: 0

In the second test case

'z' is present at the index 0,4 and 9

'x' is present at the index 1 and 7

'v' is present at the index 2 and 10

'c' is present only at index 3, so 3 is the output.

'b' is present only at index 5, so 5 is the output

't' is present only at index 6, so 6 is the output

'c', 'b', and 't' are non-repeating characters, but the character 'c' is the first non-repeating. that's why 'c' is the answer.

Output: 3

Question 6:

Longest 1's

An array A of N integers is given (A_1,A_2,A_3,A_4....A_N) such that each element is either 0's and 1's.You can change upto K 0's into1's. You need to find the longest subarray that contains only 1

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Input Format

- First line of input contains two integers N And K.
- Second line contains N space separated integers.

Output Format

Print a single integer denoting the length of the longest subarray.

Question 7

Minus Minus is Plus

(−)∗(−)makes (+), minus minus makes plus. We have been performing this operation since the school days.PrepBuddy is sitting in a park and two students are sitting beside him each having one string. Lets say student1 has string s and student2 has string t. Both strings are made up of just two signs − and + and they are wondering whether string t can be obtained from string s by using an operation zero or more times.The allowed operation is:They can choose any two adjacent `minus` signs and replace them with a single `plus` sign. One such operation reduces the length of the string by one.PrepBuddy asks you to help the students.

Input Format

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

Each test case consists of two lines.

First-line contains string

Second line contains string t

Output Format

For each test case on a new line, print YES or NO depending upon whether it is possible to get t from s

Question 8

Funny Digits

Sana is now tired of long problem statements of questions so he will provide you a simple question.

You are given a number N, you have to find the largest number less than or equal to N which fulfills the following criteria.Every digit of the number should be greater than or equal to its preceding digit.

Input format

The first line contains an integer T

where

T is the number of test cases

For every Test case:

The next line contains one integer N

Output format

For every test case print the answer in the new line.

Question 9

Minimum Number of Steps to Make Two Strings Anagram

You are given two equal-size string S and T. In one step you can choose any character of T and replace it with another character.An Anagram of a string is a string that contains the same characters with a different (or the same) ordering.Print the minimum number of steps to make T an anagram of S

Note:S.length==T .length and S and T contain lower-case English letters only.

Input Format

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

Each test case contains two non-empty string S and T.

Output Format

Print the minimum number of steps to make T an anagram of S

Question 10

Number of Substrings Containing All Three Characters

Given a string S consisting only of characters a,b,and c.

Print the number of substrings containing at least one occurrence of all these characters a,b,and c.

Input Format

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

Each test case contains a non-empty string S.

Output Format

Print the number of substrings containing at least one occurrence of all these characters a,b ,and c.

Question 11

Missing One Number

You are given a string consisting of some numbers, not separated by any separator. The numbers are positive integers and the sequence increases by one at each number except the missing number. You have to print the missing number. The numbers will have no more than six digits. Print −1 if the input sequence is not valid.

Note: It is guaranteed that if the string is valid, then it is sure that exactly one number would be missing from the string.

Input Format

The first line of input contains an integer T denoting the number of test cases. Then T test cases follow. Each test case contains a string S representing a number.

Output Format

For each test case in a new line, the output will be the missing number. Output will be −1 if the input is invalid.

Question 12

Search Strings

Given a string S of length N and Q queries. In each query, you will be given a string P. You will have to print the count of occurrence of the given string in the original string and also print the starting index of each occurrence in increasing order.

Input format

First-line contains a string S

The second line contains an integer Q.

The next Q lines contain a string P.

Output format

For each query, print the answer in a new line.
First, print the count then followed by the space-separated index in increasing order.

If string P is not occurring in the orginal string that means count of occurrence is 0(zero).

Question 13

Longest Unique

A problem statement without any story. Given a string S, find the length of the longest substring with all unique characters.

Input format

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

Each test case consists of a string S.

Output format

For each test case on a new line print the required length

Sample test case explanation

In the first test case longest substring with unique characters is `pbytes` or `repbyt` both have length=6

In the second test case longest substring with unique characters is `dingplatform` with length=12

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Question 14

Multiple of Three

You are given an array A Of N integers. These integers represent the digits of a number.

The task is to determine the largest number that is multiple of three that can be formed by concatenating some of the given digits in any order.

Input Format

The first line of input contains a single integer T- denoting the number of test cases.

Each test case follows:

- The first line of each test case contains a single integer N.
- The second line contains N space-separated integers.

Output Format

Print the largest number which is divisible by 3, formed by the digits given in the array.

If no number can be formed, print -1. Display output for each test case in a new line.