SSE2025: Problem solving Techniques and Process (Spring 2013)

Programming Lab #12
Due-date: May 28th, 11:59 PM

Description

A subsequence of a given sequence is just the given sequence with some elements (possibly none) left out. Formally, given a sequence \( X = x_1x_2\ldots x_m \), another sequence \( Z = z_1z_2\ldots z_k \) is a subsequence of \( X \) if there exists a strictly increasing sequence \( <i_1, i_2, \ldots, i_k> \) of indices of \( X \) such that for all \( j = 1, 2, \ldots, k \), we have \( x_{i_j} = z_j \). For example, \( Z = bcdb \) is a subsequence of \( X = abcbdab \) with corresponding index sequence \( <2, 3, 5, 7> \).

In this problem your job is to write a program that counts the number of occurrences of \( Z \) in \( X \) as a subsequence such that each has a distinct index sequence.

Input

The first line of the input contains an integer \( N \) indicating the number of test cases to follow. The first line of each test case contains a string \( X \), composed entirely of lowercase alphabetic characters and having length no greater than 10,000. The second line contains another string \( Z \) having length no greater than 100 and also composed of only lowercase alphabetic characters. Be assured that neither \( Z \) nor any prefix or suffix of \( Z \) will have more than \( 10^{100} \) distinct occurrences in \( X \) as a subsequence.

Output

For each test case in the input output the number of distinct occurrences of \( Z \) in \( X \) as a subsequence. Output for each input set must be on a separate line.

Sample Input

```
2
babgbag
bag
rabbbit
rabbit
```

Sample Output

```
5
3
```