12743 Search For Patterns!

Searching for patterns is a very attractive field. Who didn't wish to discover the patterns of Grameen Phone recharge cards!

In this problem, first, you have to know how patterns can be subsequence of a given string. Suppose S and P are two strings. Here P will be subsequence of S if P can be derived from S by deleting some elements without changing the order of the remaining elements.

For example,

```
S = BLEALBIE
     || |  |
P = BL A   I
```

So, P (BLAI) is a subsequence of S (BLEALBIE).

We define the "First Lookup Subsequence" as follows:

> For each character, $c[i]$ ($0 \le i < |P|$, for a string X, $|X| = \mathit{length\ of}\ X$), in P, we mark the first occurrence of $c[i]$ in S and write down the positions of $c[i]$ in S as, $pos[0]$, $pos[1]$, $\ldots$, $pos[|P|-1]$, where $pos[i]$ denotes the index in S where $c[i]$ is first located (left to right searching). If these values form an increasing series, that is, $pos[0] < pos[1] < pos[2] < \ldots < pos[|P|-1]$, then we say that S contains P as a "First Lookup Subsequence".

In this problem, you will be given two strings, S and P, containing only uppercase letters of English alphabet (A-Z). Each character of S is distinguishable, that is, two 'A's are considered different. (You can assume all letters are of different colors! so that they are distinguishable). Each character in P is distinct. Your job is to find how many permutations of S contain P as a First Lookup Subsequence. Be careful about the permutations of S. Although two strings might look same, they can be of different permutations.

For example, for a string, S = AAE, we assume 3 different colors.

```
A(red)    A(blue)   E(purple)
```

So it has 6 different permutations

```
1. A(red)      A(blue)     E(purple)     => AAE
2. A(red)      E(purple)   A(blue)       => AEA
3. A(blue)     A(red)      E(purple)     => AAE
4. A(blue)     E(purple)   A(red)        => AEA
5. E(purple)   A(red)      A(blue)       => EAA
6. E(purple)   A(blue)     A(red)        => EAA
```

If we search the pattern P(AE), as a First Lookup Subsequence in all these permutations, permutation 1, 2, 3, 4 will contain P as a First Lookup Subsequence.

So the number of permutations of S, that contain P as a First Lookup Subsequence, is 4.

Input

The first line of input contains a single integer, T ($T \leq 100$), denoting the number of test cases to process. Next, there are T test cases. Each contains two strings S and P in separate lines. Here, $0 < |S| \leq 500$, $0 < |P| \leq 26$. All the letters in S and P will be uppercase English letters (`A-Z`). All the letters in P will be distinct.

Output

For each case, print a line of output in the following format:

`Case` n`:` m

Where n is the test case number and m is the output *modulo* 100007.

Sample Input

```
5
AAE
AE
AADE
DE
AADEBG
GDA
A
A
EEEEEE
E
```

Sample Output

```
Case 1: 4
Case 2: 12
Case 3: 60
Case 4: 1
Case 5: 720
```