

There were three friends (Alice, Bob and Carol) who regularly went to expeditions and discovered new mountain peaks. They often proposed different names and it was a problem to decide which name they would choose for the newly discovered peaks. Alice and Bob both said that the name of the peak must be a super sequence of their proposed names A and B, i.e. A and B should be **subsequences** of the name of the peak. Carol said that the name of the peak must be a **subsequence** of her proposed name C. As they don't like long names, they want to know the number of distinct shortest names which satisfy their needs.

So, given three strings A, B and C, you have to find the number of distinct shortest common super sequences of A and B who are also a subsequence of C. Moreover, you need to find the lexicographically earliest such sequence. Two sequences are distinct if they differ in at least one position. A **subsequence** is a sequence obtained by deleting zero or more characters from a string. A **super-sequence** is a sequence obtained by inserting zero or more characters in one or more positions of the string.

For example, say, A = 'cdfa', B = 'dga' and C = 'bcdfgaga'. Then there are two shortest common super sequences of A and B: 'cdfga' and 'cdgfa', but 'cdgfa' is not a subsequence of C. So the only possible name for the peak is 'cdfga'.

Input

The first line of input will contain T (≤ 250) denoting the number of cases.

Each case contains three lines. First line contains a string denoting A, second line contains B and third line contains C. Assume that the strings are non-empty and length of A and B will not be more than 100 and length of C will not be more than 300.

Output

For each case, print the case number and the number of distinct possible shortest names for the peak modulo 1000 000 007. And second line should contain the lexicographically earliest name. If no solution is found then print 'NOT FOUND' in second line.

Sample Input

```
2
cdfa
dga
bcdfgaga
abc
defm
abcdfghm
```

Sample Output

```
Case 1: 1
cdfga
Case 2: 0
NOT FOUND
```