Professor Hasmot Ali loves to play string related problem. He assigns an easy lab task to his students. But they think it's a hard problem. I know you are very smart. You can help his students to solve this problem.

Given a string S, containing only lowercase English letters. There will be Q queries. Each line of query will contain two space separated strings, X and Y. For every query, your task is to calculate, how many distinct substrings of S which start with X and end with Y.

[Substring definition: A substring is any contiguous portion of a string. A substring may be empty, or the entire string]

For Example:
Given a string S = "abab". There are total 8 distinct substrings. The list is below:

[0] = "a"
[1] = "ab"
[2] = "aba"
[3] = "abab"
[4] = "b"
[5] = "ba"
[6] = "bab"
[7] = ""

There are 3 queries:

1st Query: X = "a" and Y = "a".
There are 2 distinct substring of S, satisfy the condition([0] = "a" and [2] ="aba").

2nd Query: X = "a" and Y ="b".
There are 2 distinct substring of S, satisfy the condition. ([1] = "ab" and [3] = "abab").

3rd Query: X = "ba" and Y ="ab".
There is only one distinct substring satisfy the condition.([6] = "bab").

Input

Input start with an integer T (≤ 3), denoting the number of test cases.

Each case starts with a line containing string S ($1 \leq length(S) \leq 1000$). The next line contains an integer Q ($1 \leq Q \leq 50000$). Each of the next Q line contains two strings X ($1 \leq length(X) \leq 10$) and Y ($1 \leq length(Y) \leq 10$).

Output

For each query you have to print the number of distinct substring of S, which are start with X and end with Y.

Sample Input

```
1
abab
3
a a
a b
ba ab
```

Sample Output

```
Case 1:
2
2
1
```