

12837 Hasmot Ali Professor

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 $S = \text{"abab"}$. 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: $X = \text{"a"}$ and $Y = \text{"a"}$.

There are 2 distinct substring of S , satisfy the condition($[0] = \text{"a"}$ and $[2] = \text{"aba"}$).

2nd Query: $X = \text{"a"}$ and $Y = \text{"b"}$.

There are 2 distinct substring of S , satisfy the condition. ($[1] = \text{"ab"}$ and $[3] = \text{"abab"}$).

3rd Query: $X = \text{"ba"}$ and $Y = \text{"ab"}$.

There is only one distinct substring satisfy the condition. ($[6] = \text{"bab"}$).

Input

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

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

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
```