

## 1427 – Substring Frequency (II)

A string is a finite sequence of symbols that are chosen from an alphabet. In this problem you are given a string **T** and **n** queries each with a string **P<sub>i</sub>**, where the strings contain lower case English alphabets only. You have to find the number of times **P<sub>i</sub>** occurs as a substring of **T**.

### Input

Input starts with an integer **T** ( $\leq 10$ ), denoting the number of test cases.

Each case starts with a line containing an integer **n** ( $1 \leq n \leq 500$ ). The next line contains the string **T** ( $1 \leq |T| \leq 10^6$ ). Each of the next **n** lines contains a string **P<sub>i</sub>** ( $1 \leq |P_i| \leq 500$ ).

### Output

For each case, print the case number in a single line first. Then for each string **P<sub>i</sub>**, report the number of times it occurs as a substring of **T** in a single line.

Sample Input	Output for Sample Input
2	Case 1:
5	2
ababacbabac	3
aba	1
ba	4
ac	1
a	Case 2:
abc	1
3	1
lightoj	0
oj	
light	
lit	

### Notes

1. Dataset is huge, use faster I/O methods.
2. If **S** is a string then **|S|** denotes the length of **S**.