Maggu and Strings

Maggu and Coder were playing a game with strings. In each turn of the game, Maggu gives Coder a string. Coder can replace m consecutive 'a' in the string by n consecutive 'b' any number of times. This way he has to create 2 strings, one of maximum possible length and one of minimum possible length.

Input

First line of input contains a single integer T : number of test cases.(1<=T<=100).
For each test case there are exactly two lines.
First line contains a string s (1 <= length(s) <= 10^5) containing letters only from 'a' to 'z'.
Second line contains two space separated integers representing m and n respectively.(1 <= m,n <= 10^5).
Sum of length(s) over all test cases is <= 10^6.

Output

For each test case, print in a single line containing two space separated integers representing minimum and maximum length of string s that Coder can obtain.

Example

Input:
3
abc
1 2
aa
1 2
aba
1 1

Output:
3 4
2 4
3 3

Explanation

For the first test case, you can convert abc to abc (by not changing at all), bbbc (changing 'a' to 'bb'). minimum length of s is 3 and maxium length is 4.