Can Sharmeen Solve it? [Medium]

Somehow Sharmeen solved the last problem "**Sharmeen loves substring**" and Mozahid became impressed on her performance. Now Mozahid wants to test her programming skill and gives her the hardest problem of today's problem set. He will give her a string of lowercase English letters of size N(1 <= N <= 1000) and an integer X(0 <= X <= 10^8). Sharmeen has to find the largest substring of that string, which has exactly X subsequences of '**sms**'. If multiple solution exists, she has to select the leftmost one. If no solution exist she has to print "-1" (without quotes); otherwise, she has to print the starting and ending position of the substring separated by a space in one line. For exact output format, see the Sample Input Output carefully.

N.B. Substring is a consecutive sequence of characters of a string, whereas subsequence does not necessarily need to be consecutive. But for both, you have to maintain the order. For clearance, 'skmjssm' has 2 different subsequence of 'sms'. {1,3,5} & {1,3,6} (1 based position).

Input

In first line given test case T(1 <= T <= 10).

For each test case, a string of lowercase English letters of size N(1 <= N <= 1000) and an integer X(0 <= X <= 10^8) are given, separated by a space.

Output

For each test case, if solution exists print the starting and ending position of the substring (1 based position) separated by a space, otherwise, print "-1" (without quote) in one line .

Example

Input:

2

smsmmsms 1

mmsm 1

Output:

1 5

-1

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