Arrange Iftar

Mehedi and anis are friends . One day they are gossiping about different topics . Suddenly they hit a plan to arrange a iftar party among their friends, so they told their friends to attend with them. As there are few times to arrange the iftar so they told their friends to invite their friends, and their friends also told their other friends and also invite their friends.

Suppose a and b are friends, b and c are friends , c and d are friends and so on, then if first a invite b, then b invite c , c invites d and so on.

Now you are given the first friend's name who invite seconds , You should calculate maximum how many friends attend the iftar.

Input:

First integer indicates the test case(t<=10), Second line there is a integer n which indicates the how many friendship relation. Next n lines there are two string s and s1 (s!=s1) , which indicates two name and they are friends. All the string contains only ('a' to 'z'), there is no empty string.

And last there is the first friend's name who invite first others. And it is sure that this name is including from the above friendship.

Output:

You should print the result like this sample.

Sample Input	**Sample Output**
2 4 anis mehedi mehedi rony rony hasan jony hasan anis 4 anis mehedi rony mehedi rony anis romel sohel mehedi	Case 1: 5 Case 2: 3

Problem Setter:

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