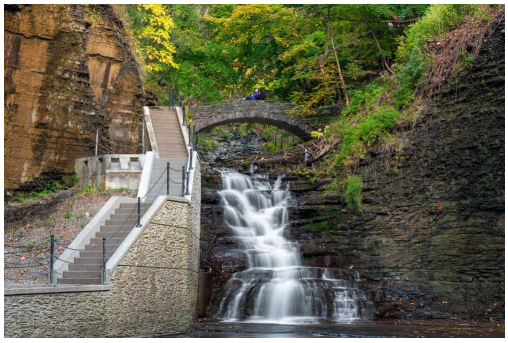
Picnic in the Gorges

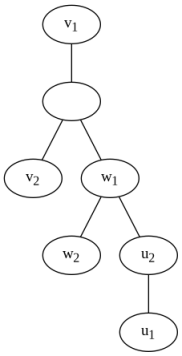
Problem ID: gorgepicnic



Over the summer and at the beginning and end of the academic year, when Ithaca enjoys warmer weather, Cornell students are known to find respite from the heat in the two creeks that cut across Cornell's Ithaca campus through two dramatic gorges — Cascadilla and Fall Creek.

Surprisingly, whenever a waterway divides in two, these two branches never meet again. In other words, the waterfall and creeks form a tree with waterfalls as nodes and waterways as edges. The waterfalls are conveniently numbered from 1 to N. Two Cornell students, Hiro and Sophie, are planning a picnic in the beautiful gorges over the weekend. Hiro will start from waterfall u and Sophie from a different waterfall v. They will each then take the shortest route along the water to meet at a third waterfall w for lunch.

They wonder whether they can meet somewhere before waterfall w and walk the rest of the way enjoying each others company.



In case 1 above (Hiro is at u_1, Sophie at v_1, and they want to meet at w_1), they will only meet at w_1.
But in case 2 they can meet before reaching w_2 (namely at the node labeled w_1).

This example corresponds to sample input 1 below.

Input

The first line of the input contains a single integer N, $3 \leq N \leq 10^5$, the number of waterfalls around Cornell.

The following $N-1$ lines describe the waterways. Each line contains two integers a, b, $1 \leq a, b \leq N$ indicating waterfall a and waterfall b are directly connected by a creek. The input guarantees the waterfalls and creeks form a valid tree.

The $N+1$-th line contains a single integer Q, $1 \leq Q \leq 10^5$, the number of days when Hiro and Sophie would like to have lunch.

The following Q lines describes each day. Each line contains three integers u, v, w, all between 1 and N, and all different describing where Hiro starts that day, where Sophie starts, and where they want to meet.

Output

For each query, output a separate line of "YES" (without quotes) if Sophie and Hiro might run into each other on their way from u to w and v to w; output "NO" otherwise.

Sample Input 1	Sample Output 1
7 1 3 2 3 3 4 4 5 4 6 6 7 2 7 1 4 6 2 5	NO YES