

1471. Distance in the Tree

Time limit: 1.0 second

Memory limit: 64 MB

A weighted tree is given. You must find the distance between two given nodes.

Input

The first line contains the number of nodes of the tree n ($1 \leq n \leq 50000$). The nodes are numbered from 0 to $n - 1$. Each of the next $n - 1$ lines contains three integers u, v, w , which correspond to an edge with weight w ($0 \leq w \leq 1000$) connecting nodes u and v . The next line contains the number of queries m ($1 \leq m \leq 75000$). In each of the next m lines there are two integers.

Output

For each query, output the distance between the nodes with the given numbers.

Sample

input	output
3	1
1 0 1	1
2 0 1	2
3	
0 1	
0 2	
1 2	

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