QTREE - Query on a tree

You are given a tree (an acyclic undirected connected graph) with **N** nodes, and edges numbered 1, 2, 3...**N**-1.

We will ask you to perfrom some instructions of the following form:

- **CHANGE i ti** : change the cost of the i-th edge to ti
  or
- **QUERY a b** : ask for the maximum edge cost on the path from node a to node b

Input

The first line of input contains an integer **t**, the number of test cases (**t** <= 20). t test cases follow.

For each test case:

- In the first line there is an integer **N** (**N** <= 10000),
- In the next **N**-1 lines, the i-th line describes the i-th edge: a line with three integers **a b c** denotes an edge between **a**, **b** of cost **c** (**c** <= 1000000),
- The next lines contain instructions **"CHANGE i ti"** or **"QUERY a b"**,
- The end of each test case is signified by the string "**DONE**".

There is one blank line between successive tests.

Output

For each "**QUERY**" operation, write one integer representing its result.

Example

```
Input:
1

3
1 2 1
2 3 2
QUERY 1 2
CHANGE 1 3
QUERY 1 2
DONE

Output:
1
3
```