Yury's Tree

Time limit: *4000 ms*
Memory limit: *1 GB*

Yury has a **rooted tree** with N nodes where node 1 is the root. The edges of this tree have *weights* and the nodes have *values*. You should perform a total of Q operations of the form:

1. Query: What is the value of a certain node v?
2. Update: You are given three integers x, y and v. You should add x to the value of all the nodes u in the subtree of v if all the weights of the edges on the path from u to v are $\geq y$.

Standard input

The first line contains two integers N and Q.

The second line contains N values representing the inital values of the nodes.

Each of the next $N-1$ lines contains three integers a, b and w, representing an edge between nodes a and b having weight w.

The next Q lines describe the operations. Each line will either be of the form $1\ v$ in the case of a query or $2\ x\ y\ v$ in the case of an update.

Standard output

The output should contain the answers for all the operations of type 1, each on a separate line.

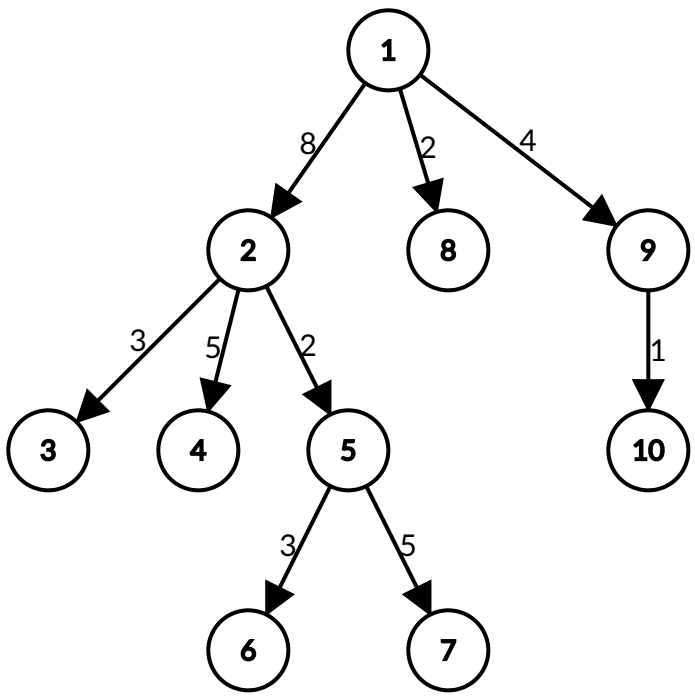
Constraints and notes

- $1 \leq N \leq 10^5$
- $1 \leq Q \leq 10^5$
- The initial values of the nodes are integers between 0 and 10^5.
- The weights of the edges are integers between 1 and 10^5.
- For all the updates $1 \leq x \leq 10^5$ and $1 \leq y \leq 10^5$

Input	Output	Explanation

```
10 20
100 0 0 0 0 0 0 0 0 0
1 2 8
2 3 3
2 4 5
2 5 2
5 6 3
5 7 5
1 8 2
1 9 4
9 10 1
2 1 3 1
2 2 2 2
1 8
2 4 1 8
1 8
1 1
2 10 5 1
1 4
2 20 2 1
2 40 4 5
1 1
1 2
1 3
1 4
1 5
1 6
1 7
1 8
1 9
1 10
```

```
0
4
101
13
131
33
23
33
62
22
62
24
21
0
```



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