

Problem G

Black Start

Time limit: 4s
Memory limit: 1GB

A storm has knocked out the regional power grid, and every substation is dark. The grid consists of n substations, numbered from 1 to n , and $n - 1$ transmission lines. Each line connects two different substations and has a positive integer length. Every substation can be reached from every other one along the lines, so the lines form a tree. The distance between two substations is the total length of the lines on the unique route between them.

Substation i is equipped with a booster of range r_i . As soon as substation i is energized, it energizes every substation whose distance from substation i is at most r_i . The newly energized substations energize further substations by the same rule, and so on, until no new substation can be energized. In particular, a substation with range 0 energizes no other substation.

To restart the grid, the operators switch on the emergency generators of some substations, which energizes these substations at the very beginning. Find the minimum number of substations whose generators must be switched on so that, in the end, every substation is energized.

Input

- The first line contains a single integer n ($1 \leq n \leq 3 \cdot 10^5$) — the number of substations.
- The second line contains n integers $r_1, r_2, \dots, r_n$ ($0 \leq r_i \leq 10^9$) — the ranges of the boosters.
- Each of the next $n - 1$ lines contains three integers u, v and ℓ ($1 \leq u, v \leq n, u \neq v, 1 \leq \ell \leq 10^9$), describing a transmission line of length ℓ between substations u and v . It is guaranteed that the lines form a tree.

Output

Print a single integer — the minimum number of substations whose generators must be switched on.

Sample Input	Sample Output
<pre>7 4 3 0 5 2 0 7 1 2 4 2 3 3 2 4 5 4 5 2 4 6 6 6 7 1</pre>	<pre>2</pre>
<pre>4 10 10 0 0 1 2 10 2 3 10 3 4 1</pre>	<pre>2</pre>

Notes

In the first example, switch on the generators of substations 1 and 7. Substation 7 energizes substation 6 (at distance 1) and substation 4 (at distance exactly 7). Substation 4 energizes substations 2 and 5, and

substation 2 energizes substation 3. No substation can energize substation 1 or substation 7; for example, substation 2 is at distance 4 from substation 1, but its range is only 3. So both generators are necessary.

In the second example, substations 1 and 2 energize each other, so a generator at either of them energizes substations 1, 2 and 3. Substation 4 is at distance 1 from substation 3, but the range of substation 3 is 0, so substation 4 needs its own generator.