



时间限制: C/C++ 2秒, 其他语言4秒

空间限制: C/C++ 262144K, 其他语言524288K

64bit IO Format: %lld

题目描述

Bob has a tree with n nodes and the weight of i -th node is w_i .

But Bob forgot $w_{1\dots n}$, he only remembers w_i is an integer in $[l_i, r_i]$ and $w_u \text{ xor } w_v$ for each edge (u, v) in the tree.

Now Bob wants to know the number of possible values of $w_{1\dots n}$.

XOR means bitwise exclusive OR

输入描述:

The first line has one integers n .

Then there are n lines, the i -th line has two integers l_i, r_i .

Then there are $n-1$ lines, each line has three integers $u, v, w_u \text{ xor } w_v$ denote the information for each edge.

$$1 \leq n \leq 10^5$$

$$0 \leq l_i \leq r_i < 2^{30}$$

$$0 \leq w_u \text{ xor } w_v < 2^{30}$$

输出描述:

Output the answer.

示例1

输入

```
4
0 7
1 6
2 5
3 4
1 2 0
1 3 7
2 4 6
```

输出

```
2
```