

Path Counting

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

There is a tree that has n vertices and $n - 1$ undirected edges. Each edge may have a different length.

We define $dis(u, v)$ as the sum of the length of the path from vertex u to vertex v .

Now you need to count the number of all unordered vertex pairs (u, v) satisfying that $dis(u, v)$ is an odd number.

Input

The first line contains an integer $n(2 \leq n \leq 10^5)$, indicating the number of vertices.

$n - 1$ lines follow, each containing three integers $u_i, v_i, w_i(1 \leq u_i, v_i \leq n, u_i \neq v_i, 1 \leq w_i \leq 10^9)$, indicating an edge of length w_i connecting vertex u_i and v_i .

Output

Output a single integer, indicating your answer.

Examples

standard input	standard output
5 1 2 1 1 3 1 2 4 1 2 5 2	6
10 5 7 1 10 3 1 4 2 5 5 1 7 4 9 10 1 4 5 8 7 6 5 10 5 6 9 4	25

Note

In the first example, the 6 unordered vertex pairs are $(1, 2), (1, 3), (1, 5), (2, 4), (3, 4), (4, 5)$ respectively.