Another Tree Problem

As you are bound to know by now, a tree is a connected graph consisting of N vertices and N–1 edges. Trees also have the property of there being exactly a single unique path between any pair of vertices. You will be given a tree in which every edge is assigned a weight – a non negative integer. The weight of a path is the product of the weights of all edges on the path. The weight of the tree is the sum of the weights of all paths in the tree. Paths going in opposite directions (A to B and B to A) are considered the same and, when calculating the weight of a tree, are counted only once.

Write a program that, given a tree, calculates its weight modulo 1000000007.

Input

The first line contains the integer N (2 ≤ N ≤ 100 000), the number of vertices in the tree. The vertices are numbered 1 to N. Each of the following N–1 contains three integers A, B and W (1 ≤ A, B ≤ N, 0 ≤ W ≤ 1000) describing one edge. The edge connects vertices A and B, and its weight is W.

Output

Output the weight of the tree, modulo 1000000007.

Sample

input:
3
3 2 100
2 1 100

output:
10200

input:
4
1 2 5
1 3 5
1 4 5

output:
90

input:
5
1 2 2
2 3 3
4 3 2
5 3 2

output:
55