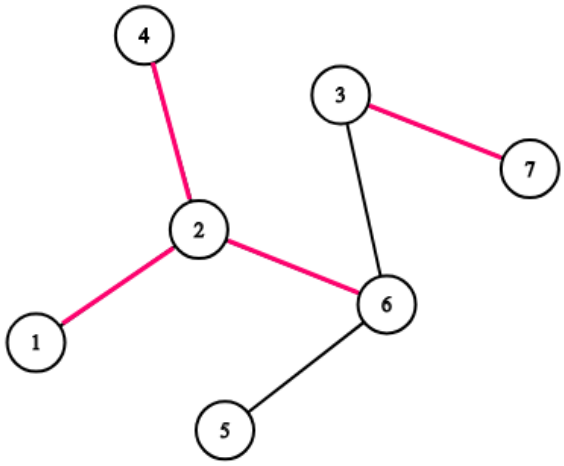
# C. Edgy Trees

difficulty: 1500
time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given a tree (a connected undirected graph without cycles) of $n$ vertices. Each of the $n - 1$ edges of the tree is colored in either black or red.

You are also given an integer $k$. Consider sequences of $k$ vertices. Let's call a sequence $[a_1, a_2, \ldots, a_k]$ *good* if it satisfies the following criterion:

- We will walk a path (possibly visiting same edge/vertex multiple times) on the tree, starting from $a_1$and ending at $a_k$.
- Start at $a_1$, then go to $a_2$ using the shortest path between $a_1$ and $a_2$, then go to $a_3$ in a similar way, and so on, until you travel the shortest path between $a_{k-1}$ and $a_k$.
- If you walked over at least one black edge during this process, then the sequence is good.




Consider the tree on the picture. If $k = 3$ then the following sequences are good: $[1, 4, 7]$, $[5, 5, 3]$ and $[2, 3, 7]$. The following sequences are not good: $[1, 4, 6]$, $[5, 5, 5]$, $[3, 7, 3]$.

There are $n^k$ sequences of vertices, count how many of them are good. Since this number can be quite large, print it modulo $10^9 + 7$.

**Input**

The first line contains two integers $n$ and $k$ $(2 \le n \le 10^5, 2 \le k \le 100)$, the size of the tree and the length of the vertex sequence.

Each of the next $n - 1$ lines contains three integers $u_i$, $v_i$ and $x_i$ $(1 \le u_i, v_i \le n, x_i \in \{0, 1\})$, where $u_i$ and $v_i$ denote the endpoints of the corresponding edge and $x_i$ is the color of this edge ($0$ denotes red edge and $1$ denotes black edge).

**Output**

Print the number of good sequences modulo $10^9 + 7$.

**Examples**

input
4 4
1 2 1
2 3 1
3 4 1
output
252

input
4 6
1 2 0
1 3 0
1 4 0
output
0

input
3 5
1 2 1
2 3 0
output
210

**Note**

In the first example, all sequences ($4^4$) of length 4 **except** the following are good:

- $[1, 1, 1, 1]$
- $[2, 2, 2, 2]$
- $[3, 3, 3, 3]$
- $[4, 4, 4, 4]$

In the second example, all edges are red, hence there aren't any good sequences.

1139C Edgy Trees
dfs and similar, dsu, graphs, math, trees
https://codeforces.com/problemset/problem/1139/C
github.com/andy489