Task: PIZ
Pizza delivery

XXIV OI, Stage III, Day trial. Source file `piz.*` Available memory: 64 MB. *10.04.2017*

Byteburg is a picturesque town of n intersections connected by a network of $n-1$ bidirectional streets. At each intersection, there is a pretty house. Byteasar's famous pizzeria is located in one of those. Byteburgers absolutely love pizza, so each morning Byteasar bakes $n-1$ pizzas and delivers them all over town – one per each house except his own.

As no one likes cold pizza, Byteasar has installed a supermodern food heater in his car. Unfortunately, supermodern implies extremely power hungry, so Byteasar would like to minimize the total duration of running the heater. To this end, he acts as follows: he packs several pizzas into the car, turns the heater on, and delivers the pizzas to selected houses. Once the last pizza of the batch is delivered, Byteasar turns the heater off and returns to his pizzeria. As he abhors wasting time, Byteasar is willing to make *at most* k such delivery runs. Now he is wondering what is the minimum total duration he has to have the heater on while delivering all pizzas.

The duration of the stops, during which Byteasar puts a pizza on a doormat and rings a bell is negligible.

Input

In the first line of the standard input, there are two positive integers n and k, separated by a single space, which specify the number of intersections in Byteburg and the maximum number of delivery runs Byteasar is willing to make, respectively. The intersections are numbered from 1 to n; the pizzeria, as the most important establishment in town, is located at intersection no. 1.

The $n-1$ lines that follow describe the street network: the i-th such line contains three positive integers a_i, b_i and c_i ($a_i, b_i \leq n$, $a_i \neq b_i$), separated by single spaces, which signify that there is a bidirectional street directly linking the intersections no. a_i and b_i whose traversal (in either direction) takes c_i minutes. The street network is well designed: It is possible to get from any intersection to any other intersection, though perhaps indirectly.

Output

In the first and only line of the standard output, a single integer should be printed: the minimum total duration (in minutes) that the heater has to be on in order for Byteasar to deliver all the pizzas warm.

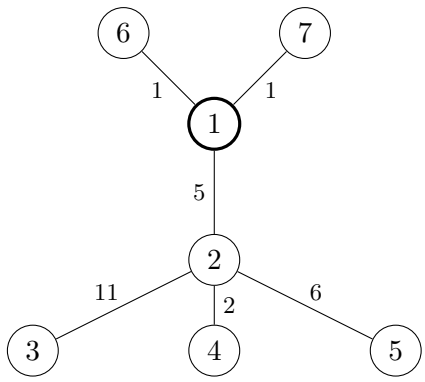
Example

For the input data:

```
7 3
1 2 5
2 3 11
2 4 2
5 2 6
1 6 1
7 1 1
```

the correct result is:

```
34
```



Explanation for the example: Byteasar will make three delivery runs: $1 \to 2 \to 4 \to 2 \to 5 \rightsquigarrow 1$ (duration of the ride with the heater on is 15 minutes), $1 \to 2 \to 3 \rightsquigarrow 1$ (16 minutes) oraz $1 \to 6 \to 1 \to 7 \rightsquigarrow 1$ (3 minutes).

Sample grading tests:

`1ocen:` $n = 15$, $k = 3$. A small complete binary tree, with traversal time of 6 minutes for streets incident to leaves and of 1 minute for all other streets.

`2ocen:` $n = 2000$, $k = 100$. All intersections are adjacent to the pizzeria. Large random traversal times.

`3ocen:` $n = 50\,000$, $k = 1000$. The pizzeria is adjacent to two intersections, one of which is adjacent to all remaining intersections. Each traversal time is 1 minute.

Grading

The set of tests consists of the following subsets. Within each subset, there may be several test groups. Every test satisfies the following: $n \geq 2$, $k \geq 1$ and $1 \leq c_i \leq 1\,000\,000$.

Subset	**Property**	**Score**
1	$n, k \leq 10$	12
2	$n, k \leq 2000$	24
3	$n, k \leq 100\,000$ and $n \cdot k \leq 4\,000\,000$	28
4	$n, k \leq 100\,000$	36