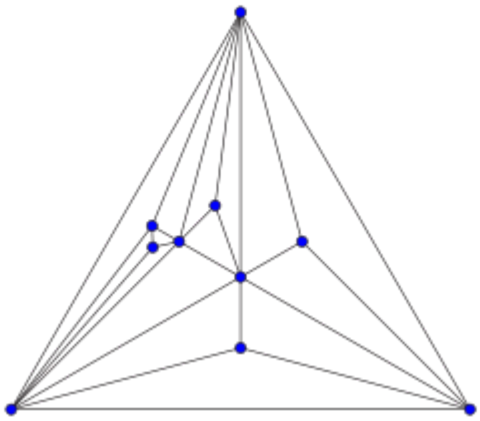
Problem A. Apollonian Network

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	256 mebibytes

An Apollonian network is an undirected graph formed by recursively subdividing a triangle into three smaller triangles.



Yuhao Du has an Apollonian network with weighted edges. And he knows how to find a simple path with the largest possible sum of edge weights. Can you find it too?

Input

The first line of the input contains one integer n: the number of vertices in Yuhao's Apollonian network ($3 \le n \le 250$).

The next $3(n-2)$ lines contain a description of the edges of the graph. Each of these lines contains three integers a_i, b_i, c_i, describing an edge between vertices a_i and b_i with weight c_i ($1 \le a_i, b_i \le n$, $a_i \ne b_i$, $0 \le c_i \le 10^6$).

It is guaranteed that the given graph is an Apollonian network.

Output

Output one integer: the largest sum of edge weights on a simple path in Yuhao's Apollonian network.

Examples

standard input	standard output
3 1 2 1 2 3 1 3 1 2	3
10 1 2 4 2 3 4 3 1 3 6 1 3 6 2 3 6 3 4 4 6 4 4 3 4 4 2 3 5 1 3 5 6 3 5 2 4 10 1 4 10 3 3 10 6 3 7 1 4 7 10 4 7 6 3 8 1 3 8 3 4 8 10 4 9 3 4 9 8 3 9 10 3	35

Note

In the first example, one of the optimal paths is $2 \to 3 \to 1$.

In the second example, one of the optimal paths is $5 \to 2 \to 1 \to 7 \to 10 \to 8 \to 9 \to 3 \to 6 \to 4$.