

KRUSKAL'S ALGORITHM

Given a weighted, undirected, and connected graph of $n_{vertices}$ vertices. Find the sum of weights of the edges of the Minimum Spanning Tree.

1 Input

- The first line contains an integer $n_{vertices}$ ($0 < n_{vertices} \leq 3000$) indicating the number of vertices in the graph.
- The next lines contain 3 integers $vertex_1$, $vertex_2$, and weight each ($0 \leq vertex_1, vertex_2 \leq n_{vertices} - 1, 0 < weight \leq 10^9$) indicating that there is an edge of weight between $vertex_1$ and $vertex_2$. The number of these lines will not exceed 10^5 .
- The input is terminated by a line containing three numbers -1.

2 Output

A single integer indicates the total weight of the Minimum Spanning Tree.

3 Example

Input:

```
5
0 4 4
1 0 4
3 0 4
2 4 2
4 3 2
3 1 3
0 2 1
2 1 2
-1 -1 -1
```

Output:

```
2
```