

MST

time limit per test: 1 second (3 seconds for Python)
memory limit per test: 500 megabytes
input: standard input
output: standard output
points: 100 · problem code: mst

You are given an undirected weighted graph. Compute the total weight of a Minimum Spanning Tree (MST) of the graph.

If the graph is disconnected, it has no spanning tree; in that case output `-1`.

Input

The first line contains integers n and m , the number of nodes and edges.

The following m lines each contain three integers a , b , and c , describing an undirected edge between a and b with weight c .

Nodes are numbered from 1 to n .

Output

Output a single integer: the weight of an MST, or `-1` if none exists.

Constraints

- $1 \leq n \leq 10^5$
- $0 \leq m \leq 2 \times 10^5$
- $1 \leq a, b \leq n$
- $1 \leq c \leq 10^9$

Example 1

Input

```
3 4
1 2 5
1 3 6
2 3 2
2 1 3
```

Output

```
5
```

Explanation

One MST uses edges of weights 3 and 2, for a total of 5.

Example 2

Input

```
4 2
1 2 1
3 4 1
```

Output

```
-1
```