Minimum Spanning Tree

Given an undirected graph with n vertices and m edges. Find minimum spanning tree and calculate its total length, if you cannot form the tree, print -1.

Input

- First line contains n and m

- Next m lines, each line contains three integers represent for and edge: vertex1, vertex2 and length

Output

print the minimum spanning tree's total length if found, otherwise print -1

Example

Input:
5 3
2 1 97
1 3 37
2 0 11

Output:
-1

Input:
5 10
4 1 48
4 2 53
1 3 62
0 1 54
3 2 64
0 4 61
1 2 41
4 3 7
3 0 63
2 0 43

Output:
139