Greatest Tree

Description

Eddy thinks the greatest tree on the graph is a minimum spanning tree (MST). What? You say you've no idea what minimum spanning tree is? A minimum spanning tree is a spanning tree of a connected, undirected graph. It connects all the vertices together with the minimal total weighting for its edges.

A graph can have many different MSTs. Eddy choose a tree and want to make it be one of MSTs. The operation Eddy can do is to reduce some weight of edges. If Eddy reduce x weight for an edge, Eddy should pay x dollars. Can you tell Eddy what the minimum dollars he has to pay if he let the tree he chooses be one of MSTs?

Input

The first line contains a integer T indicating the total number of test cases. Each test case starts with one line containing two integers n, m, denoting the number of nodes and the number of edges in the undirected graph. Then m lines, each contains 3 integers a_i, b_i, c_i, denoting an edge (a_i, b_i) in the graph with distance c_i. The first $n-1$ lines are the edges Eddy chooses.

It's guaranteed that no edge may connect a node with itself and there may have some paralled edges.

- $1 \leq T \leq 514$
- $3 \leq n, m \leq 10^5$
- $m \geq n$
- $1 \leq a_i, b_i \leq n$
- $1 \leq c_i \leq 10^4$
- There are at most 6 test cases with $\max(n, m) > 514$

Output

For each test case, print the minimum dollars Eddy has to pay.

Sample Input

```
2
3 3
1 2 5
2 3 10
1 3 4
5 6
1 2 5
1 3 3
1 4 4
3 5 4
2 3 2
5 4 1
```

Sample Output

```
7
11
```