

Competitive Programming SS23

Submit until end of contest



Problem: icecream (3 second timelimit)

Summer is here. At least I hope it will finally be here, when you read this task. To make the heat more manageable, the HPI ice cream club wants to have ice cream available in every single room of the HPI. For each room there are two ways to do this:

1. Put a freezer with lots of ice cream into the room.
2. Build a pipe to a room that already has ice cream available.

There is a bachelor project which is already developing the robots to open freezers, get ice cream and bring it through the pipes, which can then be requested using the new HPIce app and the ice cream will be paid for by students themselves.

The freezers and pipes unfortunately cost money, so now the ice cream club wants to know, if they have enough money left in their budget. And another problem is that they have to compete with the hot chocolate distribution network that was built for last winter. Therefore, the connection between some pairs of rooms is blocked.

Input First, there is a line with $1 \leq n \leq 10^5$, the number of rooms at HPI and $1 \leq m \leq 2 \cdot 10^5$, the number of connections, that are still possible. The next line contains n integers $1 \leq c_i \leq 10^9$, the costs of building a freezer in room i . The following m lines each describe a possible pipe: They contain the indices $0 \leq a, b < n$ of the connected rooms and its cost $0 < p \leq 10^9$.

Output Output the cheapest possible cost of the ice cream system.

Sample input

```
3 2
10 7 12
0 1 7
1 2 15
```

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

Sample output

```
26
```

```
9
```