

C Coven Complications

Time limit: 2s

After some unexpected circumstances, you have become the ruler of the most prestigious witch coven in the forest. This coven controls some of the witch communities in the forest – specifically, the ones with no ferrets. The communities are linked by portals: each portal links exactly two communities.

Unfortunately, all communities owned by rival witch covens are swarmed with Ferret Potion Creators (FPCs). Each community i controlled by a rival contains $f_i > 0$ ferrets, and each day, the ferrets of this community create potions that drain power from f_i witches of each linked community you own.



Do not get fooled by their cute appearance, the FPCs are here to drain power from your witches!
 Ferret: CC BY-SA 4.0 by Alfredo Gutiérrez on Wikimedia Commons
 Hat: CC BY-SA 3.0 by WarX on Wikimedia Commons

After years of studying spells, you have finally learned a spell that can permanently protect a community from all FPC attacks. However, the spell is exhausting and can only be cast once per day. Each day proceeds as follows:

1. You cast the sealing spell on one of your unsealed communities. Witches in this community are immediately protected and lose no power from this day onwards.
2. Each of your own remaining unsealed communities loses a number of witches equal to the total number of ferrets in their directly linked rival communities.

Calculate the minimum number of witches that will lose their power before all of your communities are sealed, so you know how many shamans to hire to heal them. You may assume that each of your communities has an unlimited supply of witches.

Input

The input consists of:

- One line with two integers n and m ($1 \leq n \leq 10^5$, $0 \leq m \leq 10^5$), the number of communities and the number of portals between communities.
- One line with n integers f_1, \dots, f_n ($0 \leq f_i \leq 10^9$ for each i), the number of ferrets in each community. Your witch coven owns a community if and only if $f_i = 0$.
- m lines, each with two integers u and v ($1 \leq u < v \leq n$), indicating that a portal links the two communities u and v . There is at most one portal between the same two communities. There are no portals from a community to itself.

Output

Output the minimum number of witches that lose their power before all of your communities are sealed.

Sample Input 1

```
5 4
0 0 10 0 5
1 2
2 3
3 4
4 5
```

Sample Output 1

```
10
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Sample Input 2

```
7 9
20 15 0 2 0 10 0
1 2
1 4
1 5
2 7
3 4
3 5
3 6
5 6
6 7
```

Sample Output 2

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49
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