Functional disagrements

Sinf and NI finished arranging their stickers and realised that they were late to a discussion of programming paradigms.

Each of N paricipants in the discussion must choose one of two groups, either they choose the functional programming or the imperative programming group. While each participant has his own personal opinion on the matter, a participant will often choose contrary to his beliefs in order to avoid disagreeing with the choices of his friends.

You are given a list of participants who either prefer functional or imperative programming,and a list of all pairs of participants who are friends. Your task is to determine how each participant must choose in order to minimize the sum of the total number of disagreements between friends and the total number of participants who must choose against their own beliefs.

Input Format

The first line contains the number of participants (N) followed by the number of friendships (M).

The second line contains N integers, where the ith integer is 1 if the ith guard perfers functional programming over imperative programming, and 0 otherwise.

Finally, the next M lines of the test case each contain two distinct integers i and j (where 1 <= i, j <= n), indicating that i and j are friends. Participants within each pair of friends may be listed in any order, but no pair of guards will be repeated.

Constraints

2 <= N <= 5000 2 <= M <= 10000

Output Format

For each input test case, print a single line containing the minimum possible sum of the total number of disagreements between all friends plus the total number of participants who must vote against their own beliefs.

Sample Input 0

```
2 1
1 0
1 2
```

Sample Output 0

```
1
```

Sample Input 1

```
3 2
1 0 0
```

```
1 2
1 3
```

Sample Output 1

```
1
```