E. Array and Operations

You have written on a piece of paper an array of n positive integers $a[1]$, $a[2]$, ..., $a[n]$ and m *good* pairs of integers (i_1, j_1), (i_2, j_2), ..., (i_m, j_m). Each *good* pair (i_k, j_k) meets the following conditions: $i_k + j_k$ is an odd number and $1 \leq i_k < j_k \leq n$.

In one operation you can perform a sequence of actions:

- take one of the *good* pairs (i_k, j_k) and some integer v ($v > 1$), which divides both numbers $a[i_k]$ and $a[j_k]$;
- divide both numbers by v, i. e. perform the assignments: and .

Determine the maximum number of operations you can sequentially perform on the given array. Note that one pair may be used several times in the described operations.

Input

The first line contains two space-separated integers n, m ($2 \leq n \leq 100$, $1 \leq m \leq 100$).

The second line contains n space-separated integers $a[1]$, $a[2]$, ..., $a[n]$ ($1 \leq a[i] \leq 10^9$) — the description of the array.

The following m lines contain the description of *good* pairs. The k-th line contains two space-separated integers i_k, j_k ($1 \leq i_k < j_k \leq n$, $i_k + j_k$ is an odd number).

It is guaranteed that all the *good* pairs are distinct.

Output

Output the answer for the problem.

Examples

input

```
3 2
8 3 8
1 2
2 3
```

output

```
0
```

input

```
3 2
8 12 8
1 2
2 3
```

output

```
2
```