F. Ant colony

time limit per test: 1 second
memory limit per test: 256 megabytes

Mole is hungry again. He found one ant colony, consisting of n ants, ordered in a row. Each ant i ($1 \le i \le n$) has a strength s_i.

In order to make his dinner more interesting, Mole organizes a version of «Hunger Games» for the ants. He chooses two numbers l and r ($1 \le l \le r \le n$) and each pair of ants with indices between l and r (inclusively) will fight. When two ants i and j fight, ant i gets one battle point only if s_i divides s_j (also, ant j gets one battle point only if s_j divides s_i).

After all fights have been finished, Mole makes the ranking. An ant i, with v_i battle points obtained, is going to be freed only if $v_i = r - l$, or in other words only if it took a point in every fight it participated. After that, Mole eats the rest of the ants. Note that there can be many ants freed or even none.

In order to choose the best sequence, Mole gives you t segments $[l_i, r_i]$ and asks for each of them how many ants is he going to eat if those ants fight.

Input

The first line contains one integer n ($1 \le n \le 10^5$), the size of the ant colony.

The second line contains n integers $s_1, s_2, ..., s_n$ ($1 \le s_i \le 10^9$), the strengths of the ants.

The third line contains one integer t ($1 \le t \le 10^5$), the number of test cases.

Each of the next t lines contains two integers l_i and r_i ($1 \le l_i \le r_i \le n$), describing one query.

Output

Print to the standard output t lines. The i-th line contains number of ants that Mole eats from the segment $[l_i, r_i]$.

Examples

input

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

output

```
4
4
1
1
```

Note

In the first test battle points for each ant are $v = [4, 0, 2, 0, 2]$, so ant number 1 is freed. Mole eats the ants $2, 3, 4, 5$.

In the second test case battle points are $v = [0, 2, 0, 2]$, so no ant is freed and all of them are eaten by Mole.

In the third test case battle points are $v = [2, 0, 2]$, so ants number 3 and 5 are freed. Mole eats **only the ant 4**.

In the fourth test case battle points are $v = [0, 1]$, so ant number 5 is freed. Mole eats the ant 4.

Codeforces Round 271 (Div. 2)
Finished
Practice

→ Virtual participation

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Start virtual contest

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You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
291101212	Nov/11/2024 21:01	Accepted
287574438	Oct/23/2024 22:05	Accepted
273073325	Jul/28/2024 09:46	Accepted
273073069	Jul/28/2024 09:44	Accepted

→ Problem tags

data structures math number theory *2100

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)