CODEFORCES β
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F. Ant colony

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

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

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Submit?

Language: GNU G++11 5.1.0
Choose file: Choose File No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

data structures number theory

No tag edit access

→ Contest materials

- Announcement
- Tutorial

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