C. Bear and Prime Numbers

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Recently, the bear started studying data structures and faced the following problem.

You are given a sequence of integers $x_1, x_2, ..., x_n$ of length n and m queries, each of them is characterized by two integers l_i, r_i. Let's introduce $f(p)$ to represent the number of such indexes k, that x_k is divisible by p. The answer to the query l_i, r_i is the sum: , where $S(l_i, r_i)$ is a set of prime numbers from segment $[l_i, r_i]$ (both borders are included in the segment).

Help the bear cope with the problem.

Input

The first line contains integer n $(1 \le n \le 10^6)$. The second line contains n integers $x_1, x_2, ..., x_n$ $(2 \le x_i \le 10^7)$. The numbers are not necessarily distinct.

The third line contains integer m $(1 \le m \le 50000)$. Each of the following m lines contains a pair of space-separated integers, l_i and r_i $(2 \le l_i \le r_i \le 2 \cdot 10^9)$ — the numbers that characterize the current query.

Output

Print m integers — the answers to the queries on the order the queries appear in the input.

Examples

input
6 5 5 7 10 14 15 3 2 11 3 12 4 4

output
9 7 0

input
7 2 3 5 7 11 4 8 2 8 10 2 123

output
0 7

Note

Consider the first sample. Overall, the first sample has 3 queries.

1. The first query $l = 2, r = 11$ comes. You need to count $f(2) + f(3) + f(5) + f(7) + f(11) = 2 + 1 + 4 + 2 + 0 = 9$.
2. The second query comes $l = 3, r = 12$. You need to count $f(3) + f(5) + f(7) + f(11) = 1 + 4 + 2 + 0 = 7$.
3. The third query comes $l = 4, r = 4$. As this interval has no prime numbers, then the sum equals 0.