Hearts

Rock has an array a consisting of his n favorite integers: $a[1], a[2], \ldots, a[n]$.

Saul asks him q queries. Each query is described by a rectangle. For query i $(1 \leq i \leq q)$, you will be given two integers $h[i]$ and $w[i]$ denoting the lengths of sides of the corresponding rectangle.

For each query i $(1 \leq i \leq q)$, Rock needs to count the number of **good** elements in array a. Here an element A will be considered **good** if Rock can draw at least one rectangle with the following properties:

- Area of the rectangle is exactly A.
- All sides of the rectangle have integer lengths.
- The rectangle **fits** inside the query rectangle.

A rectangle with sides of lengths x_1 and y_1 **fits** inside another rectangle with sides of lengths x_2 and y_2, if both $x_1 \leq x_2$ and $y_1 \leq y_2$ hold, or both $y_1 \leq x_2$ and $x_1 \leq y_2$ hold.

Help Rock answer all of the queries. Note that if a **good** element occurs more than one time in the array, it should be counted that many times.

Input

Read the input from the standard input in the following format:

- line 1: n
- line 2: $a[1]$ $a[2]$ $\ldots$ $a[n]$
- line 3: q
- line $3 + i$ $(1 \leq i \leq q)$: $h[i]$ $w[i]$

Output

Write the output to the standard output in the following format:

- line i $(1 \leq i \leq q)$: the answer to query i.

Constraints

- $1 \leq n \leq 1\,000\,000$
- $1 \leq a[i] \leq 1\,000\,000$ (for all $1 \leq i \leq n$)
- $1 \leq q \leq 100\,000$

- $1 \leq h[i], w[i] \leq 1\,000\,000$ (for all $1 \leq i \leq q$)

Subtasks

1. (5 points) $n \leq 10$, $q \leq 10$.
2. (7 points) $n \leq 100\,000$, $q \leq 100$, $a[i] \leq 100\,000$ (for all $1 \leq i \leq n$) and $h[i] = w[i]$ (for all $1 \leq i \leq q$).
3. (16 points) $n \leq 100\,000$, $a[i] \leq 100\,000$ (for all $1 \leq i \leq n$) and $h[i] = w[i]$ (for all $1 \leq i \leq q$).
4. (32 points) $n \leq 100\,000$, $a[i] \leq 100\,000$ (for all $1 \leq i \leq n$).
5. (40 points) No further constraints.

Examples

Example 1

```
3
5 6 4
3
2 2
2 3
6 6
```

The correct output is:

```
1
2
3
```

For the first query, only element 4 is good. Rock can draw a rectangle with sides of lengths 2 and 2.
For the second query, elements 6 and 4 are good.
For the last query, all the elements 5, 6 and 4 are good.