Easy String Problem

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given a string with length n, and the size of the alphabet also is n.

There are q queries. For a query, you are given two integers l, r and you need to answer the number of different strings (which can be empty) that can be obtained by removing a substring containing $[l, r]$.

Input

The first line contains one integer n ($3 \le n \le 10^5$), denoting the length of the string a.

The second line contains n integers $a_1, a_2, \cdots, a_n$ ($1 \le a_i \le n$).

The third line contains one integer q ($1 \le q \le 10^5$), denoting the number of queries.

For the 4-th to $(q+3)$-th lines, each line contains two integers l, r ($1 \le l \le r \le n$), denoting a query.

Output

For each query, output a number in a line indicating the answer.

Example

standard input	standard output
4 1 2 3 1 6 1 1 3 3 2 3 2 4 1 3 1 4	4 5 3 2 2 1

Note

The string in the sample is equal to "abca".

For the first query $1, 1$:

- "bca" can be obtained by removing substring $[1, 1]$.
- "ca" can be obtained by removing substring $[1, 2]$.
- "a" can be obtained by removing substring $[1, 3]$.
- Empty string can be obtained by removing substring $[1, 4]$.

So the answer is 4.

For the third query $2, 3$:

- "aa" can be obtained by removing substring $[2, 3]$.
- "a" can be obtained by removing substring $[1, 3]$ or $[2, 4]$.
- Empty string can be obtained by removing substring $[1, 4]$.

So the answer is 3.