D-query

English Vietnamese

Given a sequence of n numbers a_1, a_2, ..., a_n and a number of d-queries. A d-query is a pair (i, j) ($1 \le i \le j \le n$). For each d-query (i, j), you have to return the number of distinct elements in the subsequence a_i, a_{i+1}, ..., a_j.

Input

- Line 1: n ($1 \le n \le 30000$).
- Line 2: n numbers a_1, a_2, ..., a_n ($1 \le a_i \le 10^6$).
- Line 3: q ($1 \le q \le 200000$), the number of d-queries.
- In the next q lines, each line contains 2 numbers i, j representing a d-query ($1 \le i \le j \le n$).

Output

- For each d-query (i, j), print the number of distinct elements in the subsequence a_i, a_{i+1}, ..., a_j in a single line.

Example

Input

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

Output

```
3
2
3
```