Problem G. Prof. Pang's sequence

Prof. Pang is given a fixed sequence $a_1, \ldots, a_n$ and m queries.

Each query is specified by two integers l and r satisfying $1 \le l \le r \le n$. For each query, you should answer the number of pairs of integers (i, j) such that $l \le i \le j \le r$ and the number of distinct integers in $a_i, \ldots, a_j$ is odd.

Input

The first line contains a single integer n ($1 \le n \le 5 \times 10^5$).

The next line contains n integers $a_1, \ldots, a_n$ ($1 \le a_i \le n$ for all $1 \le i \le n$) separated by single spaces.

The next line contains a single integer m ($1 \le m \le 5 \times 10^5$).

Each of the next m lines contains two integers l and r ($1 \le l \le r \le n$) separated by a single space denoting a query.

Output

For each query, output one line containing the answer to that query.

Examples

standard input	standard output
5 1 2 3 2 1 5 1 5 2 4 1 3 2 5 4 4	10 3 4 6 1
5 2 3 5 1 5 5 2 3 1 1 1 3 2 5 2 4	2 1 4 6 4
10 2 8 5 1 10 5 9 9 3 5 10 6 8 1 2 3 5 5 7 1 7 3 9 4 9 1 4 3 7 2 5	4 2 4 4 16 16 12 6 9 6