



Chain Reaction

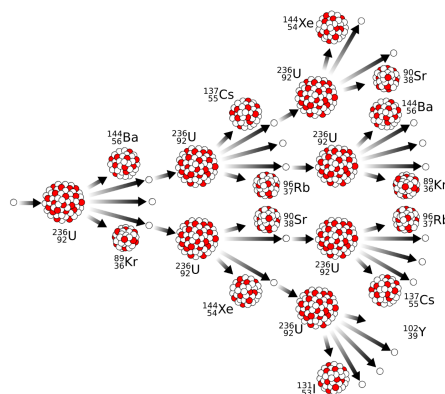
Time Limit: 5 s | Memory Limit: 512 MiB

Professor X is the kind of scientist who treats the warning “please do not mix random chemicals” in the same way as C programmers treat compiler warnings. His laboratory is cluttered with bubbling flasks, and a collection of machines of questionable safety. Today, he is testing his latest breakthrough theory.

According to X, all chemicals have a special phase number v associated with them. When two chemicals with identical phase numbers are brought into the same reaction line, they trigger a spectacular phenomenon known as the *Near-Zero Phase Cancellation* reaction, where all chemicals between the two matching chemicals are vaporised.

For instance, suppose X has a sequence of chemicals with phase numbers 1, 3, 1, 3. If he places the chemicals from left to right, the third chemical will trigger a NZPC reaction with the first chemical and vaporise the first, second and third chemicals. The remaining chemical with phase number 3 will not trigger any further reactions, so it will be the only chemical that remains.

X is given a sequence A of n chemicals, where the phase number of the i -th chemical is a_i ($1 \leq i \leq n$). He then asks q queries. In the j -th query ($1 \leq j \leq q$), you are given an interval $[l_j, r_j]$. For each query, X places the chemicals in the interval $[l_j, r_j]$ from left to right. After all the NZPC reactions have occurred, determine how many chemicals remain in the sequence.



Nuclear fission of Uranium, a chain reaction.

Input

The first line contains a positive integer $1 \leq T \leq 5$, the number of test cases.

For each test case:

The first line contains a positive integer $1 \leq n \leq 10^5$, the length of the chemical sequence A .

The second line contains n positive integers $a_1, a_2, \dots, a_n$, where $1 \leq a_i \leq 50$ is the phase number on the i -th chemical.

The third line contains a positive integer $1 \leq q \leq 10^5$, the number of queries.

The next q lines each contain two integers l_j and r_j ($1 \leq l_j \leq r_j \leq n$), describing a query.

Output

For each test case, output q lines.

The j -th line ($1 \leq j \leq q$) should contain a non-negative integer: the answer to the j -th query.

Explanation

For the first query of sample input 1, X has a sequence of chemicals with phase number 1, 2, 2. Since the last two chemicals have the same phase number, they trigger a NZPC reaction and vaporise both of them. The remaining chemical has phase number 1, so the answer is 1.

For the second query, the NZPC reactions are as follows: $\{1\} \rightarrow \{1, 2\} \rightarrow \{1, 2, 2\} \rightarrow \{1\} \rightarrow \{1, 3\} \rightarrow \{1, 3, 1\} \rightarrow \{\} \rightarrow \{3\}$ So only the chemical with phase number 3 remains, and the answer is 1.

NZPC26

1

Sample Input 1

Sample Output 1

1	1
6	1
1 2 2 3 1 3	0
4	2

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