Repeated Subarray

Given an array of *n* positive integers: a_1, a_2 , a_3…, a_n and there are *m* queries. Each of the queries will be defined by 4 numbers: *l, r, x, y*. For each query you need to answer the number of distinct values that are repeated from *x* to *y* times in the sub-array a_l, a_{l+1},…, a_r

Input

The first line contains the integer *n* (1≤ *n* ≤ 50000) – the length of the array.

The following line contains *n* positive integers representing the array a_1, a_2 , a_3…, a_n ($a_i \leq 10^9$)

The next line contains an integer m (1≤ *m* ≤ 50000) – the number of queries.

Each of the next *m* lines consists of 4 integers $l_i, r_i, x_i, y_i (1 \leq l_i \leq r_i \leq n, 1 \leq x_i \leq y_i \leq n)$ – the query for how many distinct values that appear at least x_i and at most y_i times within the sub-array from l_i to r_i of the array.

Output

Output *m* lines each of which answers for the respective query.

Examples

Standard Input	Standard Output
6 1 1 2 2 2 3 4 1 2 1 2 1 5 2 2 1 5 2 3 3 6 2 3	1 1 2 1
10 1 2 4 2 3 5 5 4 2 1 5 2 5 2 2 2 5 1 2 4 10 2 2 1 10 3 3 6 10 2 2	1 3 2 1 1