Problem K
K Query

Given a sequence of integers $(a_1, a_2, \ldots, a_n)$, for a pair of indices (i, j) such that $1 \leq i \leq j \leq n$, we define $f(i, j)$ as below: considering all pairs of elements a_u and a_v such that $i \leq u \leq v \leq j$, $f(i, j)$ is the sum of absolute difference over all these pairs.

For example, considering the sequence $(1, 1, 2, 3)$, we have:

- $f(1, 1) = |1 - 1| = 0$.
- $f(1, 2) = |1 - 1| + |1 - 1| + |1 - 1| = 0$.
- $f(2, 4) = |1 - 1| + |1 - 2| + |1 - 3| + |2 - 2| + |2 - 3| + |3 - 3| = 4$.

You are given q queries. In each query, you are given 3 integers x, y and k. You need to count the number of pairs of indices (i, j) such that:

- $x \leq i \leq j \leq y$,
- $f(i, j) \leq k$.

Input

The first line of the input contains a single integer n $(1 \leq n \leq 2\,000)$ — the length of the sequence.

The second line contains n integers $a_1, a_2, \ldots, a_n$ $(-10^9 \leq a_i \leq 10^9)$.

The third line contains a single integer q $(1 \leq q \leq 2 \cdot 10^5)$ — the number of queries.

In the next q lines, each line contains three integers x, y and k $(1 \leq x \leq y \leq n, 0 \leq k \leq 10^{18})$ describing a query.

Output

For each query, print its answer in a single line.

Sample Input 1	Sample Output 1
4 1 1 2 3 3 1 1 0 1 2 0 2 4 2	1 3 5