Problem I

Inversion Counting

You have a sequence of N integers a_i with elements between 1 and K, and you want to calculate the number of inversions. To make it more complicated you get Q operations i, change all occurrences of i to $i+1$, and vice versa.

Each operation changes the original sequence for the following operations.

note: is considered an inversion to a pair of indices (i, j), where $i < j$ and $a_i > a_j$.

Input

The first line contains three integers N, K, Q ($1 \leq K \leq N \leq 100\,000$, $1 \leq Q \leq 1\,000\,000$).

The next line contains N integers $a_1, a_2, \ldots, a_N$ ($1 \leq a_i \leq K$) specifying the sequence.

The following Q lines each contain an integer i ($1 \leq i \leq K-1$), representing the operation of swapping i elements with $i+1$, and vice versa.

Output

For each Q operation, print a single integer, the number of inversions as specified in the statement.

Input example 1	**Output example 1**
5 4 3 1 4 2 1 2 3 2 1	4 2 2