Finding Pairs

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

You are given three integers n, k and q along with a sequence $a_1, a_2, ..., a_n$. You have to process q queries.

For each query, you will be given two integers l, r. Then, you should find a sequence of length $2m$ that consists of pairwise distinct integers, denoted as $b_1, b_2, ..., b_{2m}$, such that $l \leq b_1, b_2, ..., b_{2m} \leq r$, and for each $i \in [1, m]$, $|b_{2i-1} - b_{2i}| = k$. m is a non-negative integer determined by you. Among all the valid sequences, you should find the maximum value of $a_{b_1} + a_{b_2} + ... + a_{b_{2m}}$, and output it for each query.

Input

The first line contains three integers n, k, q ($1 \leq n, q \leq 10^5$, $1 \leq k \leq n$).

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

Each of the following q lines contains two integers l, r ($1 \leq l \leq r \leq n$), indicating a query.

Output

For each query, output an integer in a single line indicating the answer.

Example

standard input	standard output
7 2 5 -1 2 4 -3 6 5 3 1 5 2 6 3 7 1 7 2 4	10 12 12 14 0