Title: CardGame

Problem Statement:

Little Timmy is playing a card game with n cards, each card consists of an integer value [1, 10^9]. He builds 3 decks from his original deck of n cards, building from left to right. The first deck has a size of a and the second deck has a size of b.

On each turn, he will announce his moves:

1. Timmy can swap 2 different decks. ("SWAP X Y")
2. Timmy can reverse a deck, or all his cards. ("REVERSE X"), ("REVERSE ALL"). If he reverses all his cards, he first swaps the first and last decks, and then reverses each deck.
3. Timmy can increment a deck, or all his cards by a certain amount ("INCREMENT X V"), ("INCREMENT ALL V"). The value V to increment will be of range [1, 10^3].

X, Y are integers {1, 2, 3} which represent the indexes of the decks from left to right. The game lasts q turns. Print his final cards after all his turns, in order.

Input:

The first line consists of integers n, a, b. (1 <= n <= 10^6) (1 <= a < b <= n)

The next line consists of n integers, which represents all his cards arranged in order at the start.

The next line consists of 1 integer q, where 1 <= q <= 10^6.

In the next q lines there will be 1 turn each, the turns are the moves that Timmy announces as stated in the problem statement.

Example:

Input:

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10 3 3
1 2 3 4 5 6 7 8 9 10
7
SWAP 1 2
SWAP 2 3
REVERSE 1
INCREMENT 1 2
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REVERSE ALL

INCREMENT ALL 5

INCREMENT 3 1

Output:

8 7 6 15 14 13 12 12 13 14

Explanation:

Input	Output
10 3 3	
1 2 3 4 5 6 7 8 9 10	
7	
SWAP 1 2	Cards: [4,5,6,1,2,3,7,8,9,10]
SWAP 2 3	Cards: [4,5,6,7,8,9,10,1,2,3]
REVERSE 1	Cards: [6,5,4,7,8,9,10,1,2,3]
INCREMENT 1 2	Cards: [8,7,6,7,8,9,10,1,2,3]
REVERSE ALL	Cards: [3,2,1,10,9,8,7,6,7,8]
INCREMENT ALL 5	Cards: [8,7,6,15,14,13,12,11,12,13]
INCREMENT 3 1	Cards: [8,7,6,15,14,13,12,12,13,14]