

Potatoes

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Aizhan is going to teach Emil how to cook Qyrydaq, a traditional Kazakh dish made of fine meat and potatoes. According to her ancient recipe, the first step is to fry potatoes. For that an important rule must be followed — you may fry potatoes in one pan only if they are of **different** sizes.

A portion of the recipe describes a special technique of separating potatoes. First, all n potatoes of sizes a_1, a_2, \dots, a_n you have at hand must be lined up in a row. Then the following procedure must be applied:

1. If the current row contains no two potatoes of the same size, then all the potatoes in the row are fried together in one pan for x seconds.
2. Otherwise, the current row of potatoes must be separated into two. The first of the new rows will contain odd-indexed potatoes (a_1, a_3, \dots), while the other row will contain the even-indexed ones (a_2, a_4, \dots). The separation takes y seconds. The procedure is then applied to both new rows successively.

Emil quickly guessed, that it might take too much to use all of the n potatoes. Instead, he decided to use only the potatoes belonging to an interval a_l, a_{l+1}, \dots, a_r . Now, he just needs to choose the values l and r , for which he has come up with q different options.

Help our dear friend out. For each of the q options of choosing l and r calculate the time required for frying the potatoes a_l, a_{l+1}, \dots, a_r lined up in a row according to the procedure above.

You can find additional clarifications in the “Notes” section.

Input

The first line of input file contains three integers n, x, y ($1 \leq n \leq 2 \cdot 10^5$, $0 \leq x, y \leq 10^9$).

The second line contains n whitespace separated integers a_1, \dots, a_n ($1 \leq a_i \leq n$).

The third line contains the integer q ($1 \leq q \leq 2 \cdot 10^5$).

The final q lines of input each contain two numbers l_i, r_i ($1 \leq l_i \leq r_i \leq n$) - the values of l and r in the i -th option.

Output

In each of the q lines print out the time necessary for frying the potatoes $a_{l_i}, a_{l_i+1}, \dots, a_{r_i}$.

Scoring

This problem contains 8 subtasks that meet the following requirements:

1. $n, q \leq 1000$. Worth 11 points.
2. $n \leq 1000$. Worth 12 points.
3. $a_i \leq 1$. Worth 7 points.
4. $a_i \leq 2$. Worth 15 points.
5. $n, q \leq 10^4$. Worth 16 points.
6. $n, q \leq 5 \cdot 10^4$. Worth 14 points.
7. $n, q \leq 10^5$. Worth 13 points.

8. Original problem constraints. Worth 12 points.

Example

standard input	standard output
4 5 6	27
1 2 1 3	5
2	
1 4	
2 4	

Note

For example, suppose $x = 5$, $y = 6$, and the potatoes are lined up with sizes $[5, 1, 2, 1, 3, 4, 1]$. For $l = 2, r = 5$, we should first separate $[1, 2, 1, 3]$ in two rows $[1, 1]$ and $[2, 3]$, using up 6 seconds. Frying the second row $[2, 3]$ will take 5 more seconds. The first row $[1, 1]$ must be separated into $[1]$ and $[1]$, using additional 6 seconds. Finally both rows are fried for 5 seconds. The time required for the whole procedure is $6 + 5 + 6 + 5 + 5 = 27$ seconds.

Emil will be cooking alone, so all the actions are done successively. In other words, at any moment during the separating and frying procedures exactly one action is taking place (frying or separating a row into two).