A. Speedy Haircut

time limit per test: 1 s.
memory limit per test: 256 MB

LetianPie is a famous barber who is known for his speed. People are bewildered by his haircutting speed but no one understands the secret as to how he does it. LetianPie's secret is that he considered the client's head as a length n array representing lengths of each strand of hair. LetianPie also has special scissors which can cut all continuous strands of hair to length l, given that the length of each strand is strictly greater than l. LetianPie believes that he has finished the haircut if all strands of hair have length at most l. Then, LetianPie uses the minimal number of cuts to be most efficient.

Since LetianPie also cares about the precision of the cuts, he carefully observes that sometimes a strand of hair may increase in length. Therefore, you need to process queries of two types:

- 0 — How many cuts LetianPie would need to make currently (without actually cutting it).
- $1\ k\ h$ — k-th strand of hair grows by h centimeters.

Input

The first line contains three integers n, q and l ($1 \le n, q \le 100\,000$, $1 \le l \le 10^9$) — the number of strands of hair, the number of queries and the length that all strands of hair should be at most.

The second line contains n integers a_i ($1 \le a_i \le 10^9$) — the initial lengths of all strands of hair for LetianPie's client.

Each of the following q lines contains a request in the format described in the statement.

The request description starts with an integer c_i. If $c_i = 0$, then you need to calculate how many cuts would need to be made. Otherwise, $c_i = 1$ and in this moment one strand of hair grows. The rest of the line contains two more integers: k_i and h_i ($1 \le k_i \le n$, $1 \le h_i \le 10^9$) — the index of the strand of hair and the length it grows by.

Output

For each $c_i = 0$ query, print the number of cuts to be made.

Example

input

```
4 7 3
1 2 3 4
0
1 2 3
0
1 1 3
0
1 3 1
0
```

output

```
1
2
2
1
```

Note

Consider the first example:

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→ About Group
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→ Group Contests
- Line Sweep - Homework (Extra Credit)
- Convex Hull - Preclass
- Number Theory I - Homework
- Line Sweep - Preclass
- Number Theory II - Homework
- Combinatorics - Homework
- Geometry - Preclass
- Geometry - Homework
- Convex Hull - Homework (Extra Credit)
- Rabin Karp - Homework
- Number Theory II - Preclass
- Combinatorics - Preclass
- DP TSP - Homework
- KMP - Homework
- DP Tree - Homework
- Number Theory I - Preclass
- KMP - Preclass
- DP Palindromes - Homework
- Rabin Karp - Preclass
- DP Edit Distance - Homework
- DP Knapsack - Homework
- DP TSP - Preclass
- DP Longest Increasing Subsequence - Homework
- DP Intro - Homework
- DP Tree - Preclass
- Greedy - Homework
- Fenwick Tree - Homework

- Initial lengths of hair are equal to $1, 2, 3, 4$ and only 4-th strand of hair is longer $l = 3$, and LetianPie can cut it in 1 second.
- Then the client's second strand of hair grows, the lengths of hair are now equal to $1, 5, 3, 4$
- Now haircut takes two cuts: for the 4-th strand of hair and for the 2-nd.
- Then the client's first strand of hair grows, the lengths of hair are now equal to $4, 5, 3, 4$
- The haircut still takes two cuts: one cut for the 4-th strand of hair and one for both 1-st to 2-nd strands of hair.
- Then the client's third strand of hair grows, the lengths of hair are now equal to $4, 5, 4, 4$
- Now haircut takes only one cut: cutting the segment from 1-st strand of hair to the 4-th.