A. Greg and Array

time limit per test: 1.5 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Greg has an array $a = a_1, a_2, ..., a_n$ and m operations. Each operation looks as: l_i, r_i, d_i, $(1 \le l_i \le r_i \le n)$. To apply operation i to the array means to increase all array elements with numbers $l_i, l_i + 1, ..., r_i$ by value d_i.

Greg wrote down k queries on a piece of paper. Each query has the following form: x_i, y_i, $(1 \le x_i \le y_i \le m)$. That means that one should apply operations with numbers $x_i, x_i + 1, ..., y_i$ to the array.

Now Greg is wondering, what the array a will be after all the queries are executed. Help Greg.

Input

The first line contains integers n, m, k $(1 \le n, m, k \le 10^5)$. The second line contains n integers: $a_1, a_2, ..., a_n$ $(0 \le a_i \le 10^5)$ — the initial array.

Next m lines contain operations, the operation number i is written as three integers: l_i, r_i, d_i, $(1 \le l_i \le r_i \le n), (0 \le d_i \le 10^5)$.

Next k lines contain the queries, the query number i is written as two integers: x_i, y_i, $(1 \le x_i \le y_i \le m)$.

The numbers in the lines are separated by single spaces.

Output

On a single line print n integers $a_1, a_2, ..., a_n$ — the array after executing all the queries. Separate the printed numbers by spaces.

Please, do not use the `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use the `cin`, `cout` streams of the `%I64d` specifier.

Examples

input Copy

```
3 3 3
1 2 3
1 2 1
1 3 2
2 3 4
1 2
1 3
2 3
```

output Copy

```
9 18 17
```

input Copy

```
1 1 1
1
1 1 1
1 1
```

Codeforces Round #179 (Div. 1)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Problem tags**

data structures | implementation | *1400

No tag edit access

→ **Contest materials**

- Announcement #1 (en)
- Announcement #2
- Tutorial

output Copy

```
2
```

input Copy

```
4 3 6
1 2 3 4
1 2 1
2 3 2
3 4 4
1 2
1 3
2 3
1 2
1 3
2 3
```

output Copy

```
5 18 31 20
```
