Problem C. Greg and Array

Time limit 1500 ms
Mem limit 262144 kB

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.

Sample 1

Input	Output
3 3 3 1 2 3 1 2 1 1 3 2 2 3 4 1 2 1 3 2 3	9 18 17

Sample 2

Input	Output
1 1 1 1 1 1 1 1 1	2

Sample 3

Input	Output
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	5 18 31 20