Hotels

Description

As a well-known vacation spot, there are m hotels nearby it. The hotels are owned by n people and some people may own several hotels.

The government really appreciate that people always have fun here, so they give the owners of hotels a big surprise. The hotels are indexed by the government. The government pick a range for e times. Every time they give v_i dollars to the owners whose hotels are indexed in range $[l_i, r_i]$. Because the government is poor, the owner of hotel will receive v_i dollars even if he/she has several hotels in that range.

Can you help the government to calculate the amount of money they should give for each owner?

Input

The first line contains an integer T indicating the total number of test cases. The first line of each test case contains three integers corresponding to n, m, e in the statement. The second line of each test case contains m integers $a_1, a_2, \ldots, a_m$, denoting the owner of the i-th hotel. For the following e lines, i-th line contains three integers l_i, r_i and v_i.

- $1 \leq T \leq 1000$
- $1 \leq n \leq 100000$
- $1 \leq m, e \leq 200000$
- $n \leq m$
- $1 \leq a_i \leq n$
- $1 \leq l_i \leq r_i \leq m$
- $1 \leq v_i \leq 100000$
- There are at most 5 test cases with $m + e > 2000$

Output

For each test case, please output a line with the n integers where the i-th number denoting the result of i-th owner.

Sample Input

```
2
2 3 2
1 1 2
1 2 1
2 3 1
3 5 3
1 2 2 3 1
1 4 5
2 5 3
2 4 4
```

Sample Output

```
2 1
8 12 12
```