

Update the array!

You have an array containing n elements initially all 0. You need to do a number of update operations on it. In each update you specify l , r and val which are the starting index, ending index and value to be added. After each update, you add the ' val ' to all elements from index l to r . After ' u ' updates are over, there will be q queries each containing an index for which you have to print the element at that index.

Input

First line consists of t , the number of test cases. ($1 \leq t \leq 10$)

Each test case consists of " n u ", number of elements in the array and the number of update operations, in the first line ($1 \leq n \leq 10000$ and $1 \leq u \leq 100000$)

Then follow u lines each of the format " l r val " ($0 \leq l, r < n$, $0 \leq val \leq 10000$)

Next line contains q , the number of queries. ($1 \leq q \leq 10000$)

Next q lines contain an index ($0 \leq \text{index} < n$)

Output

For each test case, output the answers to the corresponding queries in separate lines.

Example

Input:

```
1
5 3
0 1 7
2 4 6
1 3 2
3
0
3
4
```

Output:

```
7
8
6
```