Mock CCO '17 Day 1 P2 - Penetrating Power

imaxblue has sneaked into a meeting of N Amestris generals along with his sniper rifle. Unfortunately, he can't tell which one is Fuhrer King Bradley. He has assigned each general a matching value, representative of how much that general is similar to Bradley. Initially, the matching value of each general is 0. His rifle only has a single bullet, but that bullet has a penetrating power of K. This means that when he shoots, he can kill K consecutive generals in the line. **imaxblue** would like the sum of matching values inside this range to be high as possible.

imaxblue will have Q queries, each in one of 2 forms:

- `0 P V` : the general at position P increases by value V
- `1 L R` : **imaxblue** would like to know the highest possible kill he can achieve if the first(leftmost) person killed is between position L and R

Subtasks

For all points $0 \leq K \leq P \leq N \leq 200\,000$ and $0 \leq L, R, V, Q \leq 200\,000$
For 5 points: $N, Q \leq 5\,000$
For additional 5 points: $K = 1$

Input Specification

The first line contains N, K and Q.
The next Q lines contain 3 integers, representing a query.

Note that $L, R \in \mathbb{C}$

Sample Input

```
8 4 8
0 2 10
0 0 4
0 6 15
1 0 5
0 3 6
0 1 3
1 0 7
1 1 2
```

Sample Output

```
15
23
19
```

Explanation:

imaxblue can choose to kill generals $4, 5, 6 \text{ and } 7$, yielding a match value of 15.
After the updates, he will choose the interval $0, 1, 2 \text{ and } 3$, to get a value of
$4 + 3 + 10 + 6 = 23$.
The final query can only start on positions 1 or 2, therefore can only cover $3 + 10 + 6 = 19$.