

## 6734 Ganga Fort

The river Ganga is known to be long — as long as  $N$  kilometers. The Kauravas have set up  $M$  fortifications on its northern bank. The  $i$ th fortification goes from kilometer  $A[i]$  to kilometer  $B[i]$  (both inclusive) and takes  $C[i]$  units of ammunition to destroy. That is, after destroying the fortification, your ammunition store decreases by  $C[i]$ . The Pandavas wish to cross the river from the south with their army, which is  $K$  kilometers wide. Being  $K$  km wide, some parts of the army may have a clear path to the other (northern) side of the river, and others may encounter one or more fortifications that need to be destroyed; but for the whole army to cross, any and all fortifications in their way should be destroyed completely. Also, they do not wish to split up the army as they cross, since the Kauravas could ambush them there.

What is the minimum total units of ammunition they need at the beginning to overcome enough fortifications to let their army cross? The Pandavas can choose any contiguous segment of river of length  $K$  and decide to cross their army in that segment, destroying any fortifications in their way.

### Input

The first line contains the number of test cases  $T$ .  $T$  test cases follow. For each test case, the first line contains integers  $N$ ,  $M$  and  $K$ . The next  $M$  lines describe the fortifications. The  $i$ -th line contains  $A[i]$ ,  $B[i]$  and  $C[i]$ .

### Output

Output  $T$  lines, containing answers for the respective cases.

#### Constraints:

$$1 \leq K \leq N \leq 10^9$$

$$1 \leq M \leq 10^5$$

$$1 \leq A[i] \leq B[i] \leq N$$

$$1 \leq C[i] \leq 1000$$

Sum of  $M$  over all test cases in a single file does not exceed  $5 * 10^5$ .

#### Explanation:

For the first test case, you need the entire length of Ganga to cross. The Pandavas have to destroy all the fortifications.

For the second test case, you can destroy fortifications 1 and 2 to cross.

For the third test case, you can use the segment 4-6 of the Ganga. There is no need to destroy any fortification.

### Sample Input

```
3
10 3 10
1 5 20
2 7 30
3 8 40
10 3 5
1 3 2
1 4 2
```

7 10 5  
10 3 3  
1 3 1  
7 8 1  
9 10 1

### Sample Output

90  
4  
0