VPEX P5 - Points Redistribution

Time limit: 0.8s   **Memory limit:** 128M

After the revolution, [redacted] has been unrated again and all his points have been taken away. Now, he is working his way back up. On DMOJ there are N problems, the ith of which takes s_i minutes for him to implement and are worth v_i points.

Unfortunately, due to [redacted]'s poor programming abilities, he must rely on Bruce for help. This year there are Q classes. During each class, he is taught the problems from l to r and has t minutes to solve the problems. He can only solve the topics he has been taught that class because after the class, he looks at memes and forgets everything he learned.

Every time [redacted] solves problem i, they gain v_i points. **Each problem can be solved at most once per class.**

Help [redacted] regain his ranking and calculate how many points can be obtained by the end of the year.

Input Specification

The first line contains N.

The next N lines contain s_i and v_i, representing time and value of the ith problem.

The next line contains Q.

The next Q lines contain l, r, and t indicating a class t minutes long covering problems from l to r, including l and r.

Output Specification

The maximum total points that can be earned.

Constraints

For all subtasks:

$1 \leq N, v_i \leq 10^4$

$1 \leq Q \leq 10^5$

$1 \leq s_i, t \leq 100$

$1 \leq l \leq r \leq N$

Subtask 1 [20%]

$r - l \leq 100$

Subtask 2 [30%]

$Q \leq 10^4$

Subtask 3 [50%]

No additional constraints.

Sample Input 1

```
2
2 30
2 35
2
1 2 4
1 2 3
```

Sample Output 1

```
100
```

Explanation for Sample Output 1

In the first class, he can solve problems 1 and 2. In the second class, he solves problem 2.

Sample Input 2

```
4
30 50
20 40
40 45
20 45
4
2 4 100
1 4 100
1 1 100
1 3 100
```

Sample Output 2

```
455
```

Sample Input 3

```
10
60 55
85 72
86 61
85 55
63 43
39 65
30 44
6 90
28 97
48 39
10
8 9 53
5 6 40
9 10 8
1 4 65
1 4 84
8 10 15
9 9 98
5 8 81
5 6 79
2 7 73
```

Sample Output 3

```
922
```