

H Game

Description

“H game” is a newly released game. You, as the main character of the game, want to prepare a programming contest consists of M problems.

Since you are a really genuine problem setter, you rank the difficulty of the problem from 1 to 100. You want the i^{th} problem's difficulty in this contest lies in $[x_i, y_i]$.

Now, you have prepared N problems, the i^{th} problem you have can be one problem whose difficulty is in the range $[L_i, R_i]$. That is, problem i can be one problem with difficulty $L_i, L_i + 1, \dots, R_i$.

But, you found that the problems you have may not be enough for this contest, so you find Yen-Jen, the boss of this game. He also has K problems, the i^{th} problem can be a problem with difficulty in the range $[l_i, r_i]$, but if you want to buy the i^{th} problem, you need to spend c_i dollars.

Now, given the information, what is the minimum amount of money you have to spend in order to complete the contest, or print -1 indicates that it is impossible to do that.

Input

The first line of the input contains one integer N .

In the next N lines, the i^{th} line contains two integers L_i, R_i .

Then, in the next line contains one integer M .

In the next M lines, the i^{th} line contains two integers x_i, y_i .

Then, in the next line contains one integer K .

In the next K lines, the i^{th} line contains three integers l_i, r_i, c_i .

- $1 \leq M \leq 100$
- $0 \leq N, K \leq 100$
- $1 \leq l_i \leq r_i \leq 100$
- $1 \leq L_i \leq R_i \leq 100$
- $1 \leq x_i \leq y_i \leq 100$
- $1 \leq c_i \leq 10^9$

Output

Output the answer described in the problem description.

Sample Input 1

```
2
1 4
2 7
3
1 3
2 4
7 10
2
1 10 5
3 4 2
```

Sample Output 1

2

Sample Input 2

1

1 10

1

100 100

1

1 99 880301

Sample Output 2

-1