

Contest Duration: 2025-05-03(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250503T2100&p1=248>) - 2025-05-03(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250503T2240&p1=248>) (local time) (100 minutes)

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G - Specified Range Sums

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 600 points

Problem Statement

You are given an integer N and length- M integer sequences $L = (L_1, L_2, \dots, L_M)$, $R = (R_1, R_2, \dots, R_M)$, and $S = (S_1, S_2, \dots, S_M)$.

Determine whether there exists a length- N **positive integer sequence A** satisfying the following condition. If such a sequence exists, find the minimum possible sum of A .

- $\sum_{j=L_i}^{R_i} A_j = S_i$ for all i ($1 \leq i \leq M$).

Constraints

- All input values are integers.
- $1 \leq N, M \leq 4000$
- $1 \leq L_i \leq R_i \leq N$
- $1 \leq S_i \leq 10^9$

Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)
05:23:30 +11:00

N	M	
L_1	R_1	S_1
L_2	R_2	S_2
:		
L_M	R_M	S_M

Output

If there does not exist a length- N positive integer sequence A satisfying the condition, print -1.

Otherwise, print the minimum possible sum of A as an integer.

Sample Input 1

Copy

```
5 3
1 2 4
2 3 5
5 5 5
```

Copy

Sample Output 1

Copy

```
12
```

Copy

For example, $A = (1, 3, 2, 1, 5)$ satisfies the condition.

Its sum is 12, which is the minimum possible.

Sample Input 2

Copy

```
1 2
1 1 1
1 1 2
```

Copy

Sample Output 2

Copy

```
-1
```

Copy

Sometimes no such A exists.

Sample Input 3

Copy

```
9 6
8 9 8
3 6 18
2 4 19
5 6 8
3 5 14
1 3 26
```

Copy

Sample Output 3

Copy

```
44
```

Copy

```
'#telegram)
```

```
url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc404%2Ftasks%2Fabc404_g%3Flang%3Den&title=G%20-
```

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