

**Begin:** 2023-03-12  
15:00 UTC+3



**End:** 2023-03-29  
23:00 UTC+3

**Elapsed:** 16:06:01:11

Running

**Remaining:**  
1:00:58:48

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**Time limit**

6000 ms

**Mem limit**

1048576 kB

**OS**

Linux

# C - Shattered Cake



A rectangular cake is transported via a truck to a restaurant. On the way to the destination, the truck hits a pothole, which shatters the cake into  $N$  perfectly rectangular pieces of width  $w_i$  and length  $l_i$ , for  $1 \leq i \leq N$ .



At the destination, the damage is assessed, and the customer decides to order a replacement cake of the same dimensions. Unfortunately, the original order form was incompletely filled and only the width  $W$  of the cake is known. The restaurant asks for your help to find out the length  $L$  of the cake. Fortunately, all pieces of the shattered cake have been kept.

## Input

The input consists of the following integers:

- on the first line, the width  $W$  of the cake;
- on the second line, the number  $N$  of shattered pieces;
- on each of the next  $N$  lines, the width  $w_i$  and length  $l_i$  of each piece.

## Limits

- $1 \leq N \leq 5\,000\,000$ ;
- $1 \leq W, L \leq 10\,000$ ;
- for each  $1 \leq i \leq N$ ,  $1 \leq w_i, l_i \leq 10\,000$ .

## Output

The output should be the integer  $L$ .

### Sample 1

Input	copy	Output	copy
4 7 2 3 1 4 1 2 1 2 2 2 2 2		6	



<div><div></div><div></div></div> <div>21</div>	
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Server Time: 2023-03-28 22:01:11 UTC+3

