A: 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 in 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 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.

$$1 \leq N \leq 5000000$$

$$1 \leq W, L \leq 10000$$

$$1 \leq w_i, l_i \leq 10000$$

Output

The output should be the integer L.

Sample Input

```
4
7
2 3
1 4
1 2
1 2
2 2
2 2
2 1
```

Sample Output

```
6
```

برای حل این سوال از مساحت کیک‌های خورد شده استفاده می‌کنیم.

به وضوح مساحت کیک بزرگتر برابر است با مجموع مساحت‌های کیک‌های خرد شده. حال می‌توانیم از جمع مساحت مستطیل‌های ورودی، مساحت مستطیل بزرگتر را به دست آورده و با تقسیم آن بر W که یکی از ابعاد مسطیل است، مقدار L که همان بعد دیگر مستطیل است، به دست می‌آید.