

## B. Summer sell-off

time limit per test: 1 second  
memory limit per test: 256 megabytes

Summer holidays! Someone is going on trips, someone is visiting grandparents, but someone is trying to get a part-time job. This summer Noora decided that she wants to earn some money, and took a job in a shop as an assistant.

Shop, where Noora is working, has a plan on the following  $n$  days. For each day sales manager knows exactly, that in  $i$ -th day  $k_i$  products will be put up for sale and exactly  $l_i$  clients will come to the shop that day. Also, the manager is sure, that everyone, who comes to the shop, buys exactly one product or, if there aren't any left, leaves the shop without buying anything. Moreover, due to the short shelf-life of the products, manager established the following rule: if some part of the products left on the shelves at the end of the day, that products aren't kept on the next day and are sent to the dump.

For advertising purposes manager offered to start a sell-out in the shop. He asked Noora to choose any  $f$  days from  $n$  next for sell-outs. On each of  $f$  chosen days the number of products were put up for sale would be doubled. Thus, if on  $i$ -th day shop planned to put up for sale  $k_i$  products and Noora has chosen this day for sell-out, shelves of the shop would keep  $2 \cdot k_i$  products. Consequently, there is an opportunity to sell two times more products on days of sell-out.

Noora's task is to choose  $f$  days to maximize total number of sold products. She asks you to help her with such a difficult problem.

### Input

The first line contains two integers  $n$  and  $f$  ( $1 \leq n \leq 10^5$ ,  $0 \leq f \leq n$ ) denoting the number of days in shop's plan and the number of days that Noora has to choose for sell-out.

Each line of the following  $n$  subsequent lines contains two integers  $k_i, l_i$  ( $0 \leq k_i, l_i \leq 10^9$ ) denoting the number of products on the shelves of the shop on the  $i$ -th day and the number of clients that will come to the shop on  $i$ -th day.

### Output

Print a single integer denoting the maximal number of products that shop can sell.

### Examples

input	Copy
4 2 2 1 3 5 2 3 1 5	
output	Copy
10	

input	Copy
4 1 0 2 0 3 3 5 0 6	
output	Copy
5	

### Note

In the first example we can choose days with numbers 2 and 4 for sell-out. In this case new numbers of products for sale would be equal to  $[2, 6, 2, 2]$  respectively. So on the first day shop will sell 1 product, on the second — 5, on the third — 2, on the fourth — 2. In total  $1 + 5 + 2 + 2 = 10$  product units.

In the second example it is possible to sell 5 products, if you choose third day for sell-out.

Codeforces Round 415 (Div. 2)

Finished

Practice

Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

Submit?

Language: GNU G++20 13.2 (64 bit, win)

Choose file: Choose File No file chosen

Submit

Submission	Time	Verdict
<a href="#">281281268</a>	Sep/15/2024 00:11	Accepted
<a href="#">281281198</a>	Sep/15/2024 00:10	Compilation error
<a href="#">281280711</a>	Sep/15/2024 00:03	Runtime error on test 3
<a href="#">281280600</a>	Sep/15/2024 00:01	Wrong answer on test 15
<a href="#">281280554</a>	Sep/15/2024 00:00	Compilation error
<a href="#">281280414</a>	Sep/14/2024 23:59	Runtime error on test 3
<a href="#">281279773</a>	Sep/14/2024 23:50	Wrong answer on test 7
<a href="#">281279558</a>	Sep/14/2024 23:47	Wrong answer on test 7

Problem tags

greedy sortings \*1300

No tag edit access

Contest materials

Tutorial (en)