

E. Contest Strategy

Time Limit: 1 second

Points: 100

Ada is sitting a programming competition in a team with n members, numbered from 1 to n . The contest is m minutes long and her team has access to k computers to use during the contest. At any point in time:

- each computer can be used by at most one team member, and
- each team member can be using at most one computer.

Team member i will earn p_i points each minute they are on a computer (and 0 points each minute they are not on a computer). However, each team member has limited stamina, so the total time that team member i can use computers during the contest must not exceed t_i minutes.

What is the maximum amount of points that Ada's team can earn?

Input

The first line of input consists of three integers, n , m and k , representing the number of team members, the length of the contest and the number of computers. n lines follow, the i th of which consists of two integers p_i and t_i .

Constraints

All input will satisfy the following constraints:

- $1 \leq k \leq n \leq 200\,000$.
- $1 \leq m \leq 200\,000$.
- $1 \leq p_i \leq 200\,000$ for all i .
- $1 \leq t_i \leq m$ for all i .

Output

Output one integer, the maximum number of points that Ada's team can earn.

Sample Input 1

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

Sample Output 1

```
37
```

Sample Input 2

```
2 200000 1
123456 110000
100000 50000
```

Sample Output 2

```
18580160000
```

Explanation

In Sample Input 1, there are 3 team members, 2 computers, and the contest lasts for 5 minutes. One way to assign computers is as follows:

- Team member 1 uses the first computer for the first 3 minutes of the contest, earning 15 points.
- Team member 2 uses the second computer for the first 1 minute of the contest, and the first computer for the last 2 minutes of the contest, earning 6 points.
- Team member 3 uses the second computer for the last 4 minutes of the contest, earning 16 points.

This earns a total of 37 points, which is the maximum possible.

In Sample Input 2, there are 2 team members, 1 computer, and the contest lasts for 200000 minutes. If team member 1 uses the computer for 110000 minutes and team member 2 uses the computer for 50000 minutes, then this earns 18580160000 points.