Problem M - The Dancing Problem

Description

Students are organizing a final-year dance contest. Students have to register for the contest as pairs (a man and a woman), and individual students can register more than once, but always with a different pair. However, since there were many registrations, the organizers decided to impose limits on how many times each student could dance:

1) Each pair cannot do more than a certain number of dances together.

2) Each student cannot do more than a certain number of dances.

Still, the dance contest should run all night long. Therefore, given a set of registrations, they want to choose the dancing pairs such that the total number of dances is maximized according to the rules above.

Input

The input may consist of several test cases. The first line of each test case gives the number of male-female pairs (*n*), the number of men and the number of women. The second line gives the maximum number of dances that each individual student and each pair can do, respectively. Then, the description of each pair is given in the next *n* lines, consisting of two integers in a line. The first integer identifies the man, and the second integer identifies the woman. A new test case may follow, starting on the next line.

There are fewer than 200 men and 200 women in all test cases.

Output

The output is the maximum number of dances for each test case, printed on consecutive lines.

Example

Example input:

```
10 4 4
2 5
1 1
1 4
1 2
2 4
2 3
2 1
2 2
3 1
3 4
4 3
```

Example output:

```
8
```
