

# Tall Towers

## Problem ID: talltowers

You are very well aware of the saying “When life gives you blocks, make towers!”. So, you decide to do exactly that.

You have  $n$  blocks of size  $l_i \times w_i \times 1$  (that is, the height of each block is 1 unit). You want to completely use up all these blocks such that the average height of towers is as high as possible. Towers are made in the usual way: by stacking up blocks one on top of the other.

Of course, you have an eye for beauty, so just any random stack of blocks does not count as a tower for you. For every block in a tower (except the bottom-most block), you wish to ensure that it is “just the right amount” smaller than the block below it. More precisely, you can put block  $j$  on top of block  $k$  if and only if  $x \cdot l_k \leq l_j \leq y \cdot l_k$  and  $x \cdot w_k \leq w_j \leq y \cdot w_k$ . You are guaranteed that  $0 < x \leq y < 1$ .



Highly aesthetic tower of height 5

### Input

The first line of the input contains three space separated positive integers: the number of blocks  $n$  ( $1 \leq n \leq 200$ ),  $x'$  ( $1 \leq x' < 10^6$ ), and  $y'$  ( $1 \leq y' < 10^6$ ) where  $x = \frac{x'}{10^6}$  and  $y = \frac{y'}{10^6}$ . You are guaranteed that  $x \leq y$ . Then follow  $n$  lines, each describing a block. The  $i^{th}$  line contains two space separated positive integers  $l_i$  and  $w_i$  corresponding to the length and width of the  $i^{th}$  block. You are guaranteed that  $1 \leq l_i, w_i \leq 10^9$ .

### Output

Print a single integer, the number of towers in an arrangement of blocks that maximizes the average height of the towers. It can be proven that the answer is unique.

#### Sample Input 1

```
2 1 999999
5 4
1 3
```

#### Sample Output 1

```
1
```

#### Sample Input 2

```
8 1 999999
1 16
2 15
3 14
4 13
5 12
6 11
7 10
8 9
```

#### Sample Output 2

```
8
```

**Sample Input 3**

```
8 500000 500000
1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 8
```

**Sample Output 3**

```
4
```