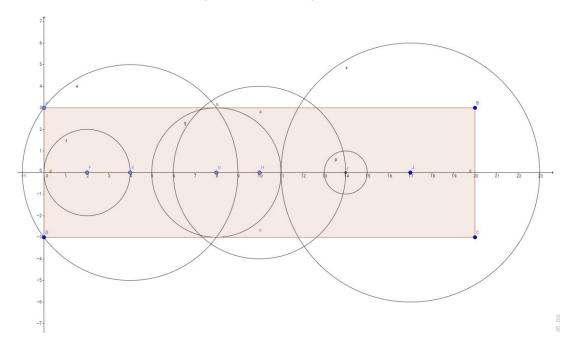
Homework 8

Minimal Cover

(Due: 2022/1/14)



There is a rectangle \mathbf{I} long and \mathbf{w} wide. And we have \mathbf{n} circles put at horizontal center line of the rectangle. For each circle, its position \mathbf{p} as the distance from left end of the center line and its radius \mathbf{r} are given. Find the minimal number of circles to cover the rectangle.

Input.txt

Input contains 936 testcases on the CodeSensor. The first line for each case contains three integers \mathbf{n} , \mathbf{l} , \mathbf{w} . The next \mathbf{n} lines consist of two integers position \mathbf{p} and radius \mathbf{r}

Output.txt

For each testcase, output the minimal number of circles to cover the rectangle. If the circles can't cover the rectangle, output -1.

Sample Input

6 20 6

45

2 2

83

10 4

17 6

14 1

10 6 37

20 4

19 20

19 2

8 4

7 19

7 14

3 17

1 19

18 1

15 19

1 10001 100

100 100

Sample Output

3

2

-1

Constrains

 $0 < n \le 10000$

 $0 < I \le 20000$

 $0 < w \le 2000$

 $0\,\leq\,p\,\leq\,20000$

 $0 \le r \le 3000$

Preload Input Data

```
struct singleTestCase{
    int n;
    int l;
    int w;
    int p[10000];
    int r[10000];
};
struct tTestData {
    struct singleTestCase data[936];
};
```