

H: Trophy Stand (Hard)

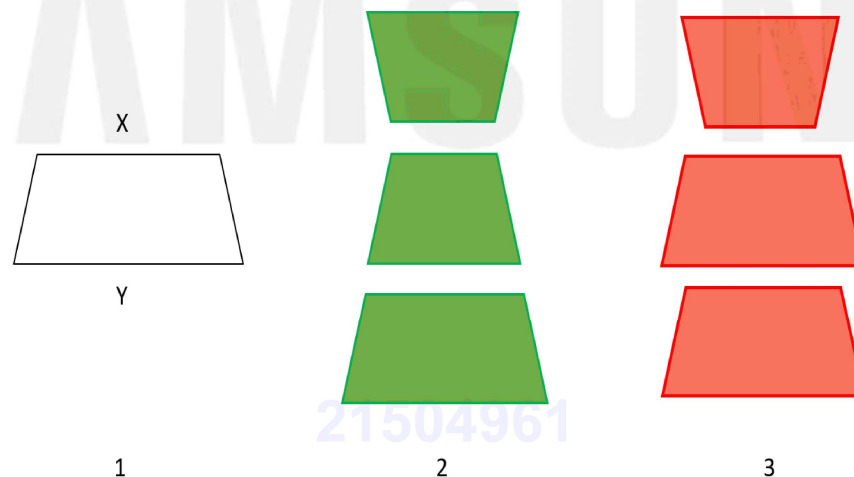
Time Limit: 3s
Memory Limit: 512MB

Problem Description

Note: The problem is identical to “Trophy Stand”, but with updated constraints.

You just recently won the Samsung Game of Quotes 2019, and are excited to display your hard-earned winner’s trophy! You are excited to display it on your table at home, but you realize something. For the trophy to look **perfect**, you want to place it on a stand such that the length of the trophy’s base (B) is equal to the stand’s length.

Since the length of your table (L), which should have served as the stand, may not be perfect for the trophy, you are allowed to buy as many as you want of N other stands. Each of these stands is shaped like a simple (convex) isosceles trapezoid, with base lengths X_i and Y_i ($X_i \neq Y_i$). You are allowed to put a stand on the table, and stack stands on top of each other, as long as the values of the touching bases are equal.



Example of a trapezoid with bases X and Y (1), a valid (2) and invalid (3) stacking of trapezoids

Since using too many stands may cause the trophy to tip over, you want to find out the minimum number of stands you have to use to ensure that your trophy can be displayed perfectly (or determine that it is impossible).

Input Specification

The first line of input contains a number T , the number of test cases to follow.

Each testcase starts with one line containing three integers N , L , and B , as defined above.

Then N lines, follow, each containing two space-separated integers. The i^{th} line contains X_i and Y_i , as defined above.

Output Specification

For each test case, output a single integer A , the **minimum number of stands** that need to be used to display the trophy perfectly, or -1 if it is impossible.

Constraints

$$1 \leq T \leq 5$$

$$1 \leq N \leq 10^5$$

$$1 \leq X_i, Y_i, B, L \leq 10^9$$

All stands are unique, i.e. either $(X_i, Y_i) \neq (X_j, Y_j)$ or $(X_i, Y_i) \neq (Y_j, X_j)$ for any $i \neq j$

Sample Input

```
2
6 120 240
120 350
120 150
240 300
240 350
150 300
300 350
1 140 100
100 140
```

Sample Output

```
2
1
```

Explanation

For the first case, you must use two stands - stands 1 and 4. Stand 1 can connect to the table using the base with length 120, and stand 1 can also connect to stand 4 using the base with length 350. The trophy can then be placed on top of stand 4's other base, with length 240.

For the second case, we simply use stand 1, connecting the base with length 140 to the table, and placing the trophy on top of the base with length 100.