Perfect Rectangle

Saeed is tackling a problem involving geometric shapes, specifically rectangles. He would like to seek your assistance in understanding how to determine whether a given set of rectangles together forms an exact cover of a rectangle region.

Input

The first line represents the number of rectangles we have, refferred to as i. The subsequent lines will consist of four integers each.
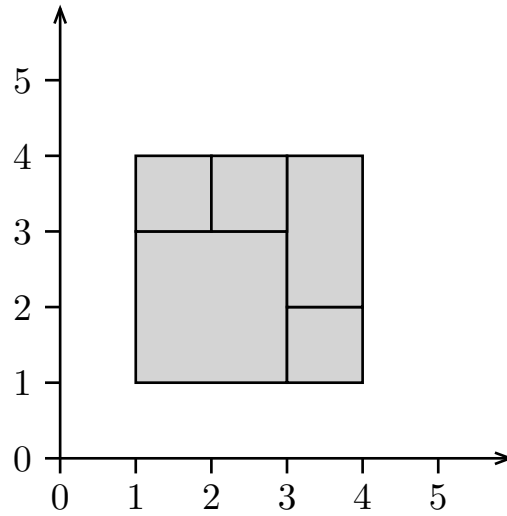
Example 1

Input:

```
5
1,1,3,3
3,1,4,2
3,2,4,4
1,3,2,4
2,3,3,4
```
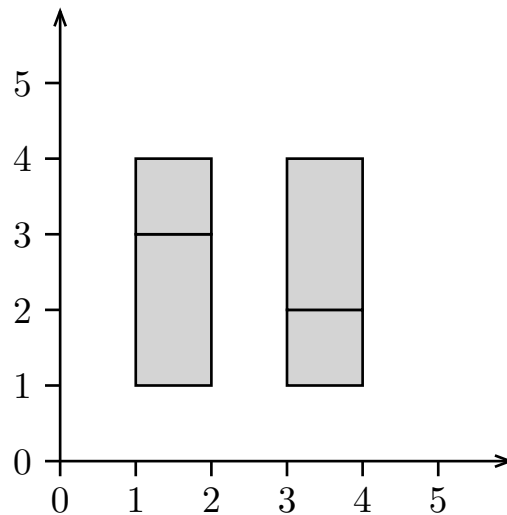
Output:

```
True
```

Example 2

Input:

```
4
1,1,2,3
1,3,2,4
3,1,4,2
3,2,4,4
```

Output:

```
False
```

Example 2

Input	Output
4	False
1,1,3,3	
3,1,4,2	
1,3,2,4	
2,2,4,4	