Prism Pyramids

Filename: `pyramid`

Danny and Lior consider themselves extraordinary engineers, and many marvel at their exceptional architectural expertise. However they have a task ahead of them. They are given *n* bricks from top to bottom with properties *w*, *l*, and *h*, denoting width, length, and height respectively, and they must determine if the bricks make a proper pyramid. The bricks make a proper pyramid if the brick on top has a strictly smaller volume, width and length than the brick below it. The bricks are given in order, so this should be easy. Your job is to solve this problem faster than Danny and Lior.

The Problem:

Given *n* prisms which make up a pyramid, you must determine whether or not is it a proper pyramid.

The Input:

The first line consists of one integer, *t*, denoting the number of pyramids. Then for every test case, an integer $1 \le n \le 100$ follows, and then *n* lines describing the bricks in order from top to bottom, with integers *w*, *l*, and *h*, such that $1 \le w, l, h \le 100$.

The Output:

Output *t* lines formatted as "`Pyramid #i: Proper Pyramid`" or "`Pyramid #i: Improper Pyramid`" without the quotes, where `i` is the test case number, depending on whether or not the pyramid is proper according to the problem statement.

Sample Input:

```
3
1
1 2 3
4
1 1 1
2 2 2
3 3 3
4 4 4
3
1 1 5
2 2 1
4 5 6
```

Sample Output:

```
Pyramid #1: Proper Pyramid
Pyramid #2: Proper Pyramid
Pyramid #3: Improper Pyramid
```