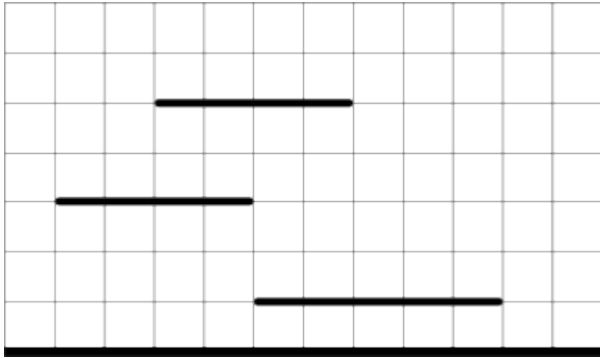


Platforms

We are designing a level for a computer game. The level consists of several platforms. In our game, unlike many others, these platforms cannot just float in the air. Each one must be nicely supported by two columns, one at each end. The bottom of the column can either be on the ground or on another platform.

You will receive the position of the platforms in our chosen coordinate system, similar to the illustration below. The position of each platform is determined by its height (vertical distance from the ground) and the coordinates of its start and end in the horizontal direction. Each column is located half a square from the end of the platform. This is illustrated in the second image.



An example level with three platforms, with heights 1, 3, and 5.



The total length of the columns is 14.

Task

Calculate the total length of the columns needed to support all the platforms in the given level.

Input

The first line contains a single integer N , $1 \leq N \leq 100\,000$, indicating the number of platforms.

This is followed by N lines, each containing three positive integers Y , X_1 , and X_2 , describing one platform. The first number is its height, and the next two are the coordinates of the start and end. None of the coordinates exceed $1\,000\,000\,000$. For horizontal coordinates, $X_2 > X_1 + 1$ always holds (i.e., the length of each platform is at least 2).

You can assume that no two platforms in the input overlap.

Output

Print a single integer, the total length of the columns needed.

Examples

input

```
3
1 5 10
3 1 5
5 3 7
```

output

```
14
```

input

```
5
50 50 90
40 40 80
30 30 70
20 20 60
10 10 50
```

output

```
200
```