

Problem D: Squares

On a large piece of paper (10000×10000 mm) little boy has painted some filled squares. All squares have sides parallel to the sides of the paper, all squares fit inside the paper, some squares may overlap.

What is the total area covered by all the squares?

Input

The first line of input

The first line of each test case contains the number of squares n , $1 \leq n \leq 100\,000$. Then follow n lines describing the squares.

Each square is described by the x, y coordinates of the lower-left corner and the length of its sides. The coordinates and lengths are given in millimeters and are integers. The bottom-left corner of the paper has coordinates $(0, 0)$.

Output

For each test case output the total area covered by the squares.

Sample input

```
1
2
0 0 3
2 2 3
```

Sample output

```
17
```

Time limit: 5 seconds