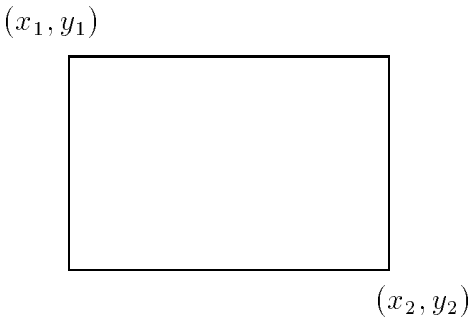
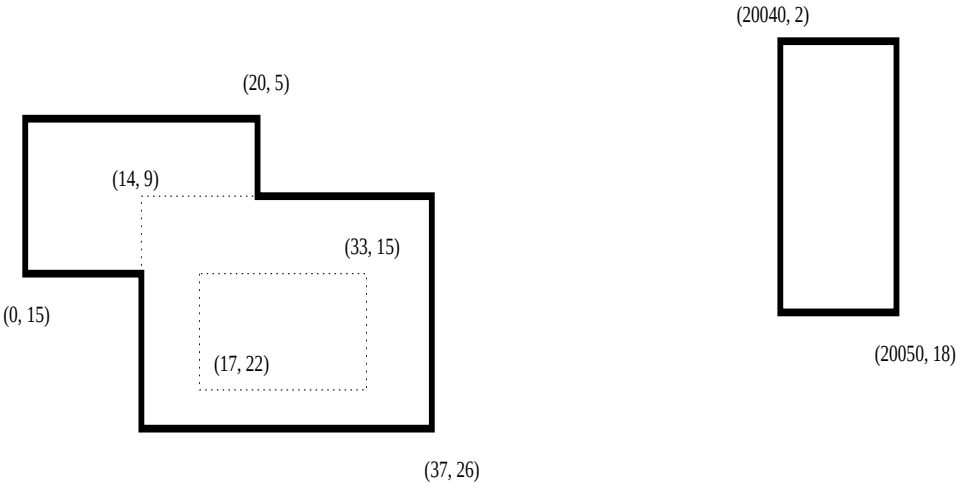
Task 4: Rectangles (RECT)

A rectangle whose edges are parallel to the axes can always be defined by the two ends of one of its diagonals. For example, a rectangle can be drawn when the top left (x_1, y_1) and the bottom right (x_2, y_2) coordinates are given.



Given a set of rectangles, we are interested in finding the total area covered by them. For instance, the total area covered by the rectangles below is the area covered within the solid lines. Notice that there is no double counting for overlapping regions.



4.1 Requirements

Write a program that, given a set of rectangles, computes the total area covered by all the rectangles.

4.2 Input File RECT.IN

The file describes a set of N rectangles where N ranges between 0 to 1000. On the first line is the integer N. The remaining lines are the coordinates of the rectangle. In each of these line, the two points (x_1, y_1) and (x_2, y_2) are given as 4 integers x_1, y_1, x_2, y_2 separated by one or more blanks. Note that they are NOT necessarily the top-left and bottom-right coordinates. In addition, x_i and y_i take the value between 0 to 32767.

For example, the input file for the above example is

```
4
20 5 0 15
37 26 14 9
20040 2 20050 18
17 22 33 15
```

4.3 Output File RECT.OUT

On the first line of file , your program must write the total area covered by the rectangles. You may assume that the area is at most 32767.

For the above example, the output file is

```
715
```