



Level 3



The simplest way to "draw" a line is to walk along it and note the cells that the line touches or crosses.

Any solution will do for now, as long as there are enough cells generated.

There must be no gaps in the line. The line must touch or cross the generated cells.

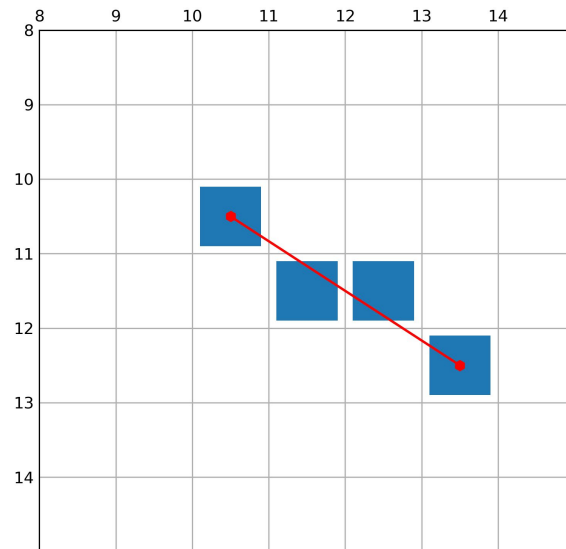
Task for Level 3:

Draw a line on the plane



Formally, for the output to be correct, the following must be true, in the same time:

- › Each cell in the output is unique
- › There must be no gaps in the line
 - › For each row that contains points of the line there must be at least one cell in the output.
 - › Likewise for each column that contains points of the line.
- › It is allowed but not necessary that the output contains all cells met by the line.
- › Input: Pair of points, depicted by 4 integers
- › Output: List of tuples, for each pair of points, the integer coordinates of the cells, while following the restrictions.





Example

Line from (10,10) to (12,13)

One correct output will be:

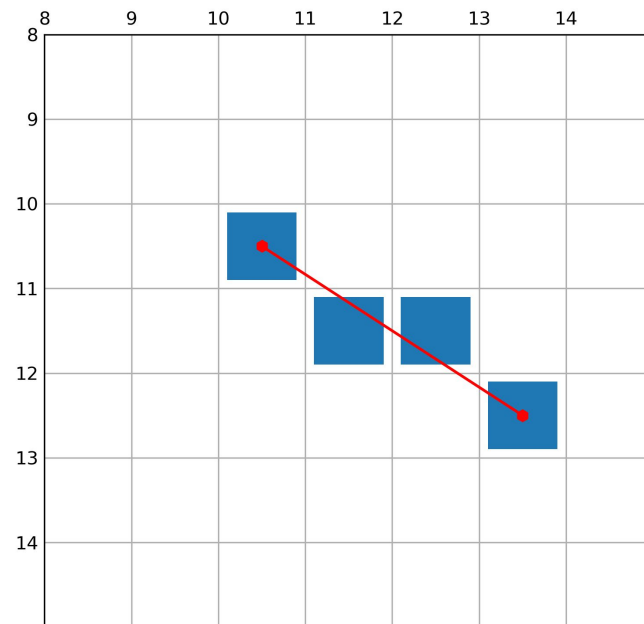
(10, 10), (11, 11), (11, 12), (12, 13)

Note that if point (11,12) is missing, there is a gap in the line:

For row coordinate $r=12$ there is no cell in the output

Also note that for this example, **there are more valid solutions.**

The order of the cells does not matter.



**Input format:**

<no_of_tuples>

<r1 c1 r2 c2>

<r1 c1 r2 c2>

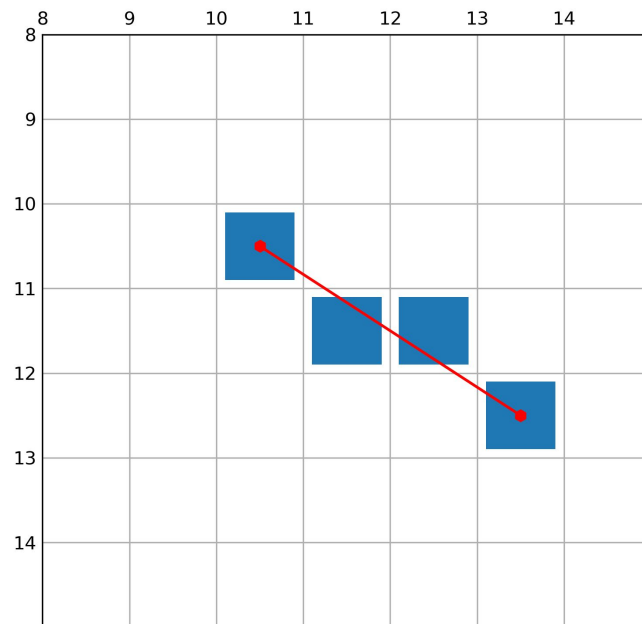
.....

Output format:

<r1 c1> <r2 c2> <r3 c3>

<r1 c1> <r2 c2> <r3 c3>

.....

**Sample input:**

1

10 10 12 13

Sample output:

10 10 11 11 11 12 12 13