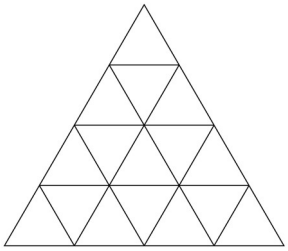
E. The Largest Triangle

Time Limit: 3 seconds

Problem description



Given n points randomly in 2D space. Identify the 3 points from n given points which create a triangle with the largest area.

Input:

Line 1: N which is number of points (N < 1000)

Next N lines: the coordinates of each point in integer format

Output:

One line includes the coordinates of 3 points which has the largest area, and area value.

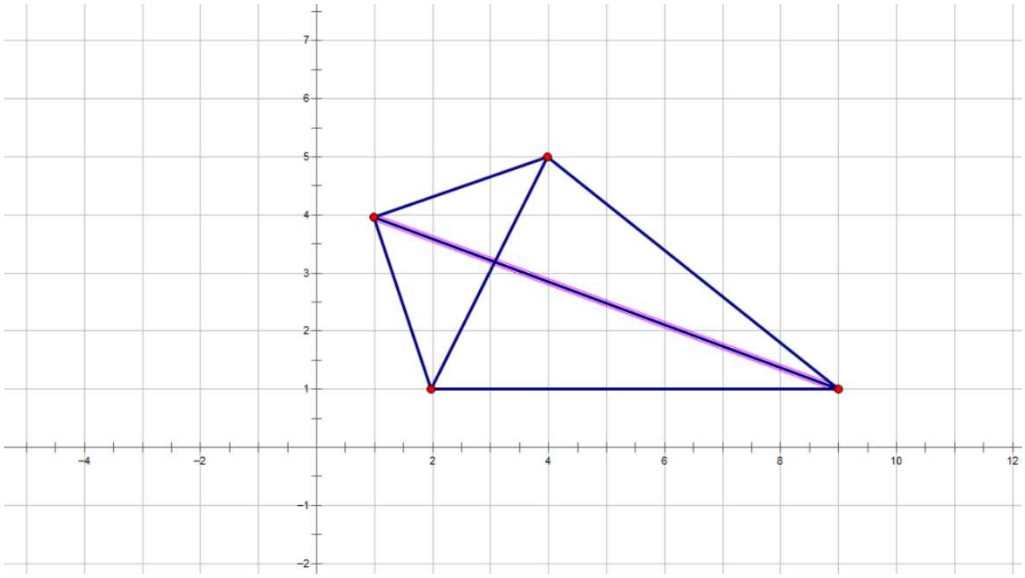
Please display information of point order by x coordinate value in ascending order, and then by y coordinate value in ascending order

The format of output:

(x1 y1) (x2 y2) (x3 y3) area=z

Where z is a double value, round up and take 1 digits of decimal part.

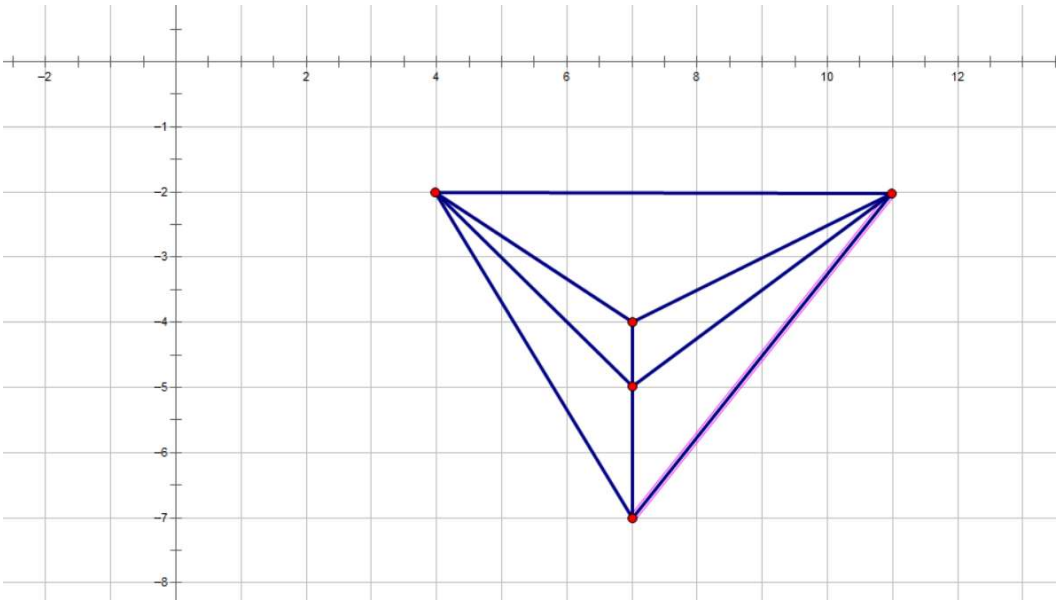
The following Figure 1 illustrate the data in example 1



Example 1

Input	**Output**
4 1 4 2 1 4 5 9 1	(2 1) (4 5) (9 1) area=14.0

Figure 2 illustrate the data of 5 points in example 2



Example 2

Input	**Output**
5 4 -2 7 -4 7 -5 7 -7 11 -2	(4 -2) (7 -7) (11 -2) area=17.5