DAY 1
Problem 3: Guarding a Gallery (30 points)

Gallery 'El Greco' consists of a single room whose walls have either a north-south direction or a west-east direction. Moreover its floor plan forms a single closed polygonal line and there are no objects of any kind inside the room. There are precious paintings on every wall and the gallery owner wants to hire a guard to guard them. So, he's interested in determining whether there is any point in the gallery from where the guard can see all the walls. Note that a wall is still visible even if the guard is located along the line of the wall.

INPUT
Your program should read the input from the file INPUT.TXT, as follows: The first line contains the number N (4 <= N <= 1000) of the corners of the gallery. On the N following lines there are pairs of integers X and Y denoting the coordinates of the corners in a clock-wise order (0 <= X, Y <= 1000).

OUTPUT
Your program should produce its output into the file OUTPUT.TXT as follows:
There will be only one line of text, containing the integer coordinates of a point in the gallery from where the guard can
see all the walls; the coordinates should be separated by one space character. There may be many possible such points, output only one. If no such point exists then your program should output "NO POINT".

EXAMPLE

INPUT.TXT	OUTPUT.TXT
6	70 10
0 0	
0 50	
50 50	
50 100	
100 100	
100 0	

Time Limit per Test: 1 second