

RECTANGLES

There are given N rectangles on the plane. Rectangle sides are parallel to coordinate axis. These rectangles may overlap, coincide or be drawn inside one another. Their vertices have non-negative integer coordinates and x coordinates do not exceed x_{\max} and y coordinates do not exceed y_{\max} .

A segment is started in the point $A(0, 0)$ and ended in point B . The coordinates of the point B (the other end of the segment) satisfy the following conditions:

- The coordinates of B are integer numbers;
- The point B belongs either to the segment $[(0, y_{\max}), (x_{\max}, y_{\max})]$ or to the segment $[(x_{\max}, 0), (x_{\max}, y_{\max})]$;

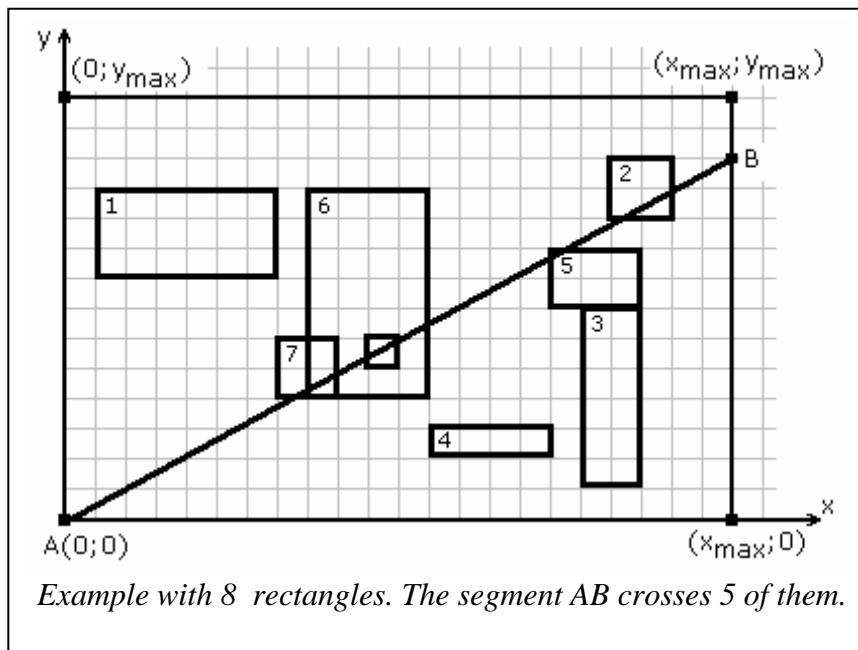
The segment AB might cross rectangles (we assume that crossing takes place even if only one rectangle vertex is crossed).

Task

Write a program to find a point B for which the segment AB crosses as many rectangles as possible.

Input

The first line of the input file `rect.in` contains three integers: x_{\max}, y_{\max} ($0 < x_{\max}, y_{\max} \leq 10^9$) and N ($1 \leq N \leq 10000$). Each of the following N lines contains four integers: coordinates of the bottom left corner x_{bl} and y_{bl} and coordinates of the top right corner x_{tr} and y_{tr} . Neighbouring numbers are separated by single space character.



Output

On the first and only line of the output file `rect.out` three integer numbers should be written. First – the maximum number of crossed rectangles followed by x and y coordinates of point B . Neighbouring numbers must be separated by single space character.

If there are several solutions, find any one of them.

Example (corresponds to the drawing)

rect.in	rect.out
22 14 8	5 22 12
1 8 7 11	
18 10 20 12	
17 1 19 7	
12 2 16 3	
16 7 19 9	
8 4 12 11	
7 4 9 6	
10 5 11 6	
	<i>Remark: Another possible solution is</i> 5 22 11