

# Counting Points In Rectangles

You're given a set **P** of  $N$  points in the plane, and a set **R** of  $M$  rectangles (also in the plane 😊).

For each rectangle from **R** determine the number of points from **P** that lie inside it or on its sides.

## Input

The first line of input contains the integer  $N$ . ( $1 \leq N \leq 200000$ )

Each of the next  $N$  lines contains a pair of integers  $(x_i, y_i)$ , the coordinates of the  $i$ -th point. ( $0 \leq x_i, y_i \leq 200000$ )

The next line of input contains the integer  $M$ . ( $1 \leq M \leq 200000$ )

Each of the next  $M$  lines contains four integers  $(x_{1i}, y_{1i}, x_{2i}, y_{2i})$ , specifying two opposite vertices of the  $i$ -th rectangle.

( $0 \leq x_{1i} < x_{2i} \leq 200000, 0 \leq y_{1i} < y_{2i} \leq 200000$ )

## Output

Output exactly  $M$  lines,  $i$ -th containing the number of points in the  $i$ -th rectangle.

## Example

**Input:**

```
4
0 0
1 3
2 7
3 3
2
0 0 3 3
0 0 3 7
```

**Output:**

```
3
4
```