# Segments

SEASON 6 – ROUND SIX – 300 points

On a line there are N + M segments with integer ends $x_i$ и $y_i$, divided into two types. The first-type segments, which are N, induce the subsegments ($x_i$, $x_i$), ($x_i$, $x_i$ + 1), … , ($x_i$, $y_i$). The second-type segments, which are M, induce the subsegments ($y_i$, $y_i$), ($y_i$ - 1, $y_i$), … , ($x_i$, $y_i$).

For segment i of type two we want to find the pairs of subsegments which satisfy the following conditions:

- The first subsegment is induced from $x_i$ $y_i$;
- The second subsegment if induced from any segment of type one;
- The two subsegments have a common point.

For each segment of type two find the number of pairs it forms. Here we define that two subsegments are the same if they have equal respective ends and are induced from the same segment.

Notice: A segment with two equal ends is considered as correct.

### Input

The first line of the input file `segments.in` contains the integers N and M. The next N + M lines contain pairs of integers (xi, yi), describing the segments. The first N lines describe the segment of type one, the last M lines describe the segments of type two.

### Output

In the output file `segments.out` write M lines. Each line must contain a single integer – the desired number of pairs for the current segment of type two. In the output, follow the ordering of the segments of type two that is set in the input.

### Constraints

$1 \leq N \leq 10^5$

$1 \leq M \leq 10^5$

**Time limit: 1.7 sec**

**Memory limit: 256 MB**

### Example

| Input (segments.in) | Output (segments.out) |
|---|---|
| 4 3<br>3 7<br>2 4<br>5 6<br>10 10<br>6 7<br>2 4<br>5 10 | 4<br>20<br>15 |