2025 … AND THE PLUNDERING PIRATES

In *"The Masked Lady … and the Plundering Pirates"* a pack of pathetically pernicious pilfering pirates had (perplexingly) previously placed precious pieces in peril (planted perpendicularly). Our plucky protagonist palliated pain by pinpointing their present placement.

In the prose, *p* prizes had been planted and our principal came into possession of the plan pointing out their position. Plenty of pirates purchased propaganda predicting the possessions per plot.

Given the coordinates for each prize, a pirate could find out how many prizes were in a rectangular plot (edges parallel to the x and y axis). Points on the boundary of the plot were considered as inside the plot.

For example, suppose the map showed prizes at (10, 10), (20, 20) and (5, 25):
- A pirate interested in the rectangular plot from (7,21) to (21,7) would be told that there were 2 prizes in this plot;
- A pirate interested in the rectangular plot from (20, 20) to (21,21) would be told there was 1 prize in that plot.

Note that prizes are never removed from their plots.

The first line of the input will contain two integers, p ($1 \leq p \leq 2^{12}$) then r ($1 \leq r \leq 2^{20}$), indicating the number of prizes followed by the number of queried rectangular plots. The next p lines will consist of two integers, x_i then y_i ($0 \leq x_i, y_i < 2^{31}$), indicating the coordinates of the ith prize; no line will be duplicated. The next r lines will consist of four integers, x_{i1} then y_{i1} ($0 \leq x_{i1}, y_{i1} < 2^{31}$) giving the coordinate of one corner of a rectangle, then x_{i2} then y_{i2} ($0 \leq x_{i2}, y_{i2} < 2^{31}$) giving the opposite corner.

You should output r lines, the ith giving the number of prizes that can be found in the ith rectangle of the input.

SAMPLE INPUT

```
3 2
10 10
20 20
5 25
7 21 21 7
20 20 21 21
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SAMPLE OUTPUT

```
2
1
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