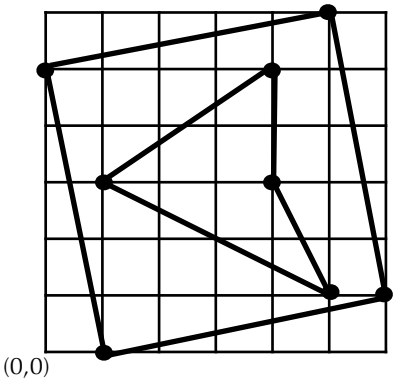
2018 CABLES

The family firm of *Widget, Whatsit & Doodah* (est. 1862) has recently sold off one of their warehouses and, being experts in all manner of things, are laying down cabling for the new buyer. Power-points have been installed in a squared grid, and the buyer has asked for some of these to be connected in loops.



For reasons unknown, the buyer has specified $s.l$ of the power-points, and requested that they be connected together into l loops, each containing s distinct points. No three specified power-points lie in a straight line. Connected points in a loop are joined by a single, straight physical cable. Health & Safety dictates that cables in a single loop are only allowed to intersect at power-points, and no cables in different loops are allowed to intersect.

It is up to Mr Thingummy (no relation) and his craftsmen to decide which power-points are in each loop. The buyer (or at least the sales contract) will be satisfied by any solution.

For example, the figure shows a potential way of linking 8 power-points into 2 loops each containing 4 power-points.

SAMPLE INPUT

```
4 2
1 0
5 6
0 5
1 3
4 3
5 1
6 1
4 5
```

The first line of input will consist of two positive integers, s ($3 \le s$) then l ($1 \le l$), with $s.l < 2^{13}$, indicating the size and number of loops respectively. Each of the next $s.l$ lines will contain two integers, x_i and y_i ($0 \le x_i, y_i < 2^{16}$), indicating the co-ordinates of the i^{th} power-point. No two power-points will be at the same position.

SAMPLE OUTPUT

```
1 3 2 7
4 8 5 6
```

You should output l lines, each containing s integers, listing the power-points in a loop; the connected power-points in a loop are the adjacent power-points in the list, as well as the first and last entries. Each specified power-point should occur on one of the lines.