Problem F

Contra Terrorism

Time limit: 1 second

Indonesian contra terrorism force a.k.a. Densus 88 has found terrorist activities detected on several spots of the dense forest at Borneo. They decided to send four teams to sweep the region from its four surrounding directions. They ask you as computer science expert to identify the locations of the four corners of the rectangular area (rectangle or square shaped) which covered all the detected spots, so they can sweep the land from it's four sides. Don't forget to make the area as small as possible so their sweep tasks and personnel allocation will be efficient.

Input

n
m
x_1 y_1
…
x_n y_n

where:

- number of case to proceed: 1 <= n <= 100
- number of spots in this case: 4 <= m <= 100000
- unsorted data of detected spots locations: 0 <= x_i y_i <= 100000
- all input data is in integer

Output

Case number, which start from 1, followed by corner coordinates of the rectangle started from the lower rightmost counter-clockwise, rounded to two decimal digits.
The resulting coordinates can be negative. Test cases always produce unique solution.

Sample Input:	**Sample Output:**
1 5 0 0 0 10 10 0 10 7 10 8	1 10.00 0.00 10.00 10.00 0.00 10.00 0.00 0.00