
Crowded line

P68571_en

Catorzè Concurs de Programació de la UPC - Final (2016-09-21)

You are given n points on the plane. You have the guarantee that there exists at least one line that contains at least 20% of the n given points. Find any such line.

Input

Input consists of several cases, with only integer numbers, each one with n , followed by n different pairs (x, y) . There is at least one line with at least $\lceil n/5 \rceil$ of the given points. Assume $2 \leq n \leq 10^5$, and that no given coordinate is larger than 10^6 in absolute value.

Output

For every case, print information about the line you found: The number m of all the given points that belong to your line, followed by all those m points in any order. The number m must be at least 2 and also at least $\lceil n/5 \rceil$. If there is more than one possible line, choose any one. Follow strictly the format of the sample output.

Sample input

```
4 0 0 0 -1 -1 0 -1 -1
3 999991 999992 999992 999993 999993 999994
11 7 0 7 2 -7 2 6 4 -6 4 5 5 -5 5 3 6 -3 6 0 7 3 3
```

Sample output

```
2 0 -1 -1 0
3 999991 999992 999992 999993 999993 999994
3 7 2 -5 5 3 3
```

Problem information

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