ICPC NWERC 2014 F - Finding Lines

Time limit: 4.0s **Memory limit:** 256M

Annabel and Richard like to invent new games and play against each other. One day Annabel has a new game for Richard. In this game there is a game master and a player. The game master draws n points on a piece of paper. The task for the player is to find a straight line, such that at least p percent of the points lie exactly on that line. Richard and Annabel have very good tools for measurement and drawing. Therefore they can check whether a point lies exactly on a line or not. If the player can find such a line then the player wins. Otherwise the game master wins the game.

There is just one problem. The game master can draw the points in a way such that it is not possible at all to draw a suitable line. They need an independent mechanism to check whether there even exists a line containing at least p percent of the points, i.e., $\lceil \frac{n \cdot p}{100e} \rceil$ points. Now it is up to you to help them and write a program to solve this task.

Input Specification

The input consists of:

- one line with one integer n $(1 \leq n \leq 10^5)$, the number of points the game master has drawn;
- one line with one integer p $(20 \leq p \leq 100)$, the percentage of points which need to lie on the line;
- n lines each with two integers x and y $(0 \leq x, y \leq 10^9)$, the coordinates of a point.

No two points will coincide.

Output Specification

Output one line containing either `possible` if it is possible to find a suitable line or `impossible` otherwise.

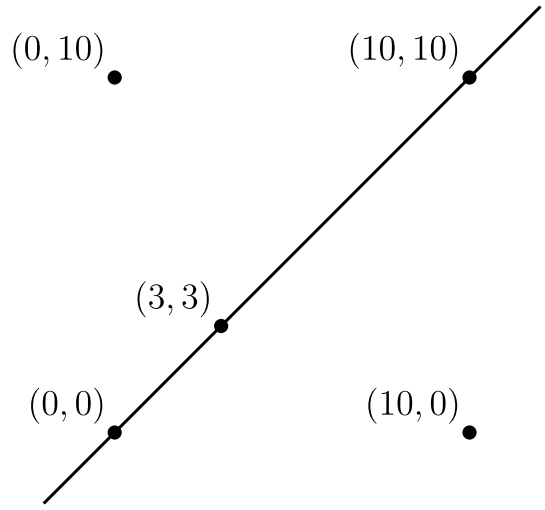
Sample Input 1

```
5
55
0 0
10 10
10 0
0 10
3 3
```

Sample Output 1

```
possible
```

Explanation for Sample 1



A line with (at least) 3 of the points exists.

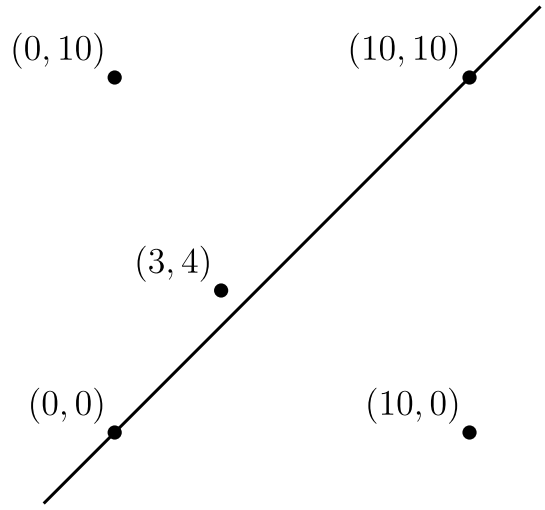
Sample Input 2

```
5
45
0 0
10 10
10 0
0 10
3 4
```

Sample Output 2

```
impossible
```

Explanation for Sample 2



No line with at least 3 points exists.