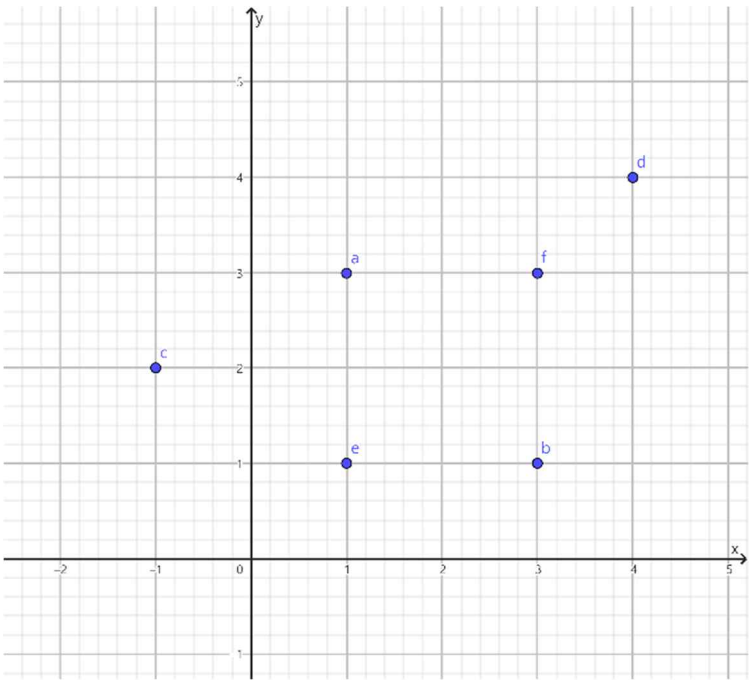
Problem K
Symmetry of Stars
Time Limit: 2 Seconds

Twinkling Stars in the universe attract us, guide us, and shed numerous intuitions to us. Astronomer Dr. K observed twinkling stars in a dark sky. One day, he was curious of symmetry of stars. To simplify the problem, he assumed the sky is a xy plane and the stars are points placed on the plane. When the set of stars S and a point $p = (p_x, p_y)$ are given, *symmetry of stars S with respect to a point p* is defined as the number of points $(x, y) \in S$ such that there exists at least one point $(x', y') \in S$ which satisfies $\left(\frac{x+x'}{2}, \frac{y+y'}{2}\right) = (p_x, p_y)$. When the set of stars S is given, *symmetry of stars S* is defined as the maximum symmetry of stars S with respect to any point p in the whole xy plane. Let's see an example following.



In the example above, we are given a set of stars $S = \{(1,3), (3,1), (-1,2), (4,4), (1,1), (3,3)\}$. The symmetry of stars S with respect to a point $p = (2,2)$ is 4 since the point $a = (1,3)$ has point $b = (3,1)$ which satisfies $\left(\frac{a_x+b_x}{2}, \frac{a_y+b_y}{2}\right) = \left(\frac{1+3}{2}, \frac{3+1}{2}\right) = (p_x, p_y) = (2,2)$ and the point $e = (1,1)$ has point $f = (3,3)$ which satisfies $\left(\frac{e_x+f_x}{2}, \frac{e_y+f_y}{2}\right) = \left(\frac{1+3}{2}, \frac{1+3}{2}\right) = (p_x, p_y) = (2,2)$. The symmetry of stars S with respect to a point $p = (-1,2)$ is 1 since the point $c = (-1,2)$ has point $c = (-1,2)$ itself which satisfies $\left(\frac{c_x+c_x}{2}, \frac{c_y+c_y}{2}\right) = \left(\frac{-1-1}{2}, \frac{2+2}{2}\right) = (p_x, p_y) = (-1,2)$. The symmetry of stars S is 4 since the symmetry of stars S with respect to the point $p = (2, 2)$ is the maximum among all the points in the xy plane.

Given a list of n distinct points that represent stars, write a program to output the symmetry of the given stars.

Input

Your program is to read from standard input. The input starts with a line containing one integer, n ($1 \leq n \leq 3{,}000$), where n is the number of stars. The stars are numbered from 1 to n. In the following n lines, the i-th line contains two integers that represent $x(-10^9 \leq x \leq 10^9)$ and $y(-10^9 \leq y \leq 10^9)$ coordinates of the star i, repectively. Note that no two stars are in the same position.

Output

Your program is to write to standard output. Print exactly one line. The line should contain the symmetry of stars.

The following shows sample input and output for three test cases.

Sample Input 1

```
6
1 3
3 1
-1 2
4 4
1 1
3 3
```

Output for the Sample Input 1

```
4
```

Sample Input 2

```
5
1 3
3 1
1 1
3 3
2 2
```

Output for the Sample Input 2

```
5
```

Sample Input 3

```
1
1 5
```

Output for the Sample Input 3

```
1
```