Problem A

We know a location of several valuable mineral deposits in the plane. We want to dig a mine of radius 1000 meters that enables us to access the largest number of deposits.

Input and output

The first line contains an integer $n \leq 5000$, the number of deposits. Each of the next n lines contains two integers x and y ($|x|, |y| \leq 100\,000$), giving the coordinates of the deposits (in meters). No two deposits have the same coordinates.

Output a single integer, the maximum number of deposits contained in a circle of radius 1000 (including possibly the points on the circumference of the circle).

Example

Input:

```
3
0 0
2000 0
2000 2000
```

Output:

```
2
```