2748 - Encouraging Contests

Description

The University of Pinar del Río (UPR) and Desoft enterprise at Pinar del Río are encouraging programming competitions. Therefore, they are hosting the first Desoft-UPR Programming Cup. They want to install a wireless device (specifically a WiFi device) to allow their employees to participate in the contest from their own computers. Charlie, commonly known as the "Wild Stallion" has been hired to configure the hardware in order to complete this task.

The selected location for installing the WiFi device is the center of Desoft enterprise, at coordinates (0, 0) for reason of this problem. The employees of Desoft are located in some integer coordinates (X, Y) according to the selected point of installation. In order to get access to the contest employees need to be into the emission range (radius of the device). Charlie wants to know the minimum emission range needed to reach all employees in Desoft.

Input specification

A single integer 1 <= N <= 1000 in the first line representing the number of employees of Desoft. The following N lines contains two space-separated integers numbers X and Y (-100 <= X, Y <= 100): the coordinates of the i-th employee of Desoft for 1 <= i <= N.

Output specification

A single line with a integer number representing the square of the minimum emission range needed to reach all employees in Desoft.

Sample input

```
5
1 1
1 -1
-1 1
-1 -1
2 2
```

Sample output

```
8
```

Hint(s)

Source	Yonny Mondelo Hernández
Added by	**ymondelo20**
Addition date	2014-03-10
Time limit (ms)	45000
Test limit (ms)	1000
Memory limit (kb)	256000
Output limit (mb)	64
Size limit (bytes)	15000
Enabled languages	Bash C C# C++ Java Pascal Perl PHP Python Ruby Text