Meeting Point

There is an infinite integer grid where **N** people live in **N** different houses. They decide to create a meeting point at one person's house.

From any given cell, all 8 adjacent cells can be reached in 1 unit of time, e.g. (x,y) can be reached from (x-1,y+1) in one unit of time. Find a common meeting place which minimizes the combined travel time of everyone.

Input Format
A positive integer N that denotes N houses or people.

The following *N* lines will contain two integers x,y each that denote the coordinates of the respective house.

Output Format
An integer, **M**, that denotes the minimum combined travel time of everyone.

Constraints
N <= 10^5
The absolute value of each co-ordinate in the input will be at most 10^9

HINT: You may need 64-bit integer.

Input #1

```
4
0 1
2 5
3 1
4 0
```

Output #1

```
8
```

Explanation
The houses will have a travel-sum of 11, 13, 8, or 10. 8 is the minimum.

Input #2

```
6
12 -14
-3 3
-14 7
-14 -3
2 -12
-1 -6
```

Output #2:

```
54
```