MLE '19 Contest 4 P5 - Geo

Given a set of N points, find the smallest Manhattan distance between any two unique points.

Manhattan distance between two points is defined as the total distance traveled parallel along the x-axis or y-axis.

Input Specification

The first line will contain the integer N $(2 \leq N \leq 1000)$.

The next N lines will each contain two integers x and y $(|x|, |y| \leq 10^{18})$, representing a point.

Output Specification

A single integer, the smallest Manhattan distance betweeen any two unique points.

Sample Input

```
3
0 0
10 5
-6 -7
```

Sample Output

```
13
```