☆ Closest Random Points

In many real world applications the problem of finding pair of closest points arises. In the real world, data is usually distributed randomly. Given *n* points on a plane that are randomly generated with uniform distribution, find the squared shortest distance between pairs of these points.

For example, there are *3* points with x coordinates *x = [0, 1, 2]* and *y = [0, 1, 4]*. The points have xy coordinates *(0, 0)*, *(1, 1)* and *(2, 4)*. The closest points are *(0, 0)* and *(1, 1)*, and their squared shortest distance is *(1-0)^2 + (1-0)^2 = 2*.

Function Description

Complete the function *closestSquaredDistance* in the editor below. The function should return a long integer denoting the squared shortest distance between the pairs of points.

closestSquaredDistance has the following parameter(s):

x: An integer array, of size *n*, where *x[i]* denotes the x coordinate of the i^{th} point.

y: An integer array, of size *n*, where *y[i]* denotes the y coordinate of the i^{th} point.

Constraints

- $2 \leq n$
- *either* $n \leq 1000$ *or* $n = 10^5$
- values of *x[i]* and *y[i]* are randomly generated with uniform distribution from the range $[0, 10^9-1]$

Input Format Format for Custom Testing

Sample Case 0

Sample Input

```
3
0
10
15
3
0
10
20
```

Sample Output

```
125
```

Explanation

There are 3 points in the input: *(0,0), (10,10), (15,20)*. The closest squared Euclidean distance among pairs of these points is between *(10,10)* and *(15,20)* which is $(15-10)^2 + (20-10)^2 = 125$

Sample Case 1

Sample Input

```
4
77
1000
992
1000000
4
0
1000
500
0
```

Sample Output

Sample Input

```
2
543243
5000
2
0
322
```

Sample Output

```
289705630733
```

YOUR ANSWER

We recommend you take a quick tour of our editor before you proceed. The timer will pause up to 90 seconds for the tour. Start tour

View Code Diff | Java 8

```
1   import java.io.*;…
16
17      // Complete the closestSquaredDistance function below.
18      static long closestSquaredDistance(List<Integer> x, List<Integer> y) {
19
20
21      }
22
23      public static void main(String[] args) throws IOException {…
```

Line: 16 Col: 1

Test against custom input

Run Code | Submit code & Continue

(You can submit any number of times)

Download sample test cases *The input/output files have Unix line endings. Do not use Notepad to edit them on windows.*