## Closest Two Points

Write a program to read **n** points and find the **closest two** of them.

### Input

The **input** holds the number of points n and n lines, each holding a point {X and Y coordinate}.

### Output

* The **output** holds the shortest distance and the closest two points.
* If several pairs of points are equally close, print **the first** of them (from top to bottom).

### Examples

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | **Output** | **Visualization** | **Comments** |
| 4  3 4  6 8  2 5  -1 3 | 1.414  (3, 4)  (2, 5) |  | The closest two points are **{3, 4}** and **{2, 5}** at distance 1.4142135623731 ≈ **1.414**. |
| 3  12 -30  6 18  6 18 | 0.000  (6, 18)  (6, 18) |  | Two of the points have the same coordinates **{6, 18}**, so the distance between them is **0**. |
| 3  1 1  2 2  3 3 | 1.414  (1, 1)  (2, 2) |  | The pairs of points {{1, 1}, {2, 2}} and {{2,2}, {3,3}} stay at the same distance, but the first pair is {**{1, 1}**, **{2, 2}**}. The distance between them is 1.4142135623731 ≈ **1.414**. |