

Problem 593: Valid Square

Problem Information

Difficulty: Medium

Acceptance Rate: 44.64%

Paid Only: No

Tags: Math, Geometry

Problem Description

Given the coordinates of four points in 2D space `p1`, `p2`, `p3` and `p4`, return `true` _if the four points construct a square_.

The coordinate of a point `pi` is represented as `[xi, yi]`. The input is **not** given in any order.

A **valid square** has four equal sides with positive length and four equal angles (90-degree angles).

Example 1:

Input: p1 = [0,0], p2 = [1,1], p3 = [1,0], p4 = [0,1] **Output:** true

Example 2:

Input: p1 = [0,0], p2 = [1,1], p3 = [1,0], p4 = [0,12] **Output:** false

Example 3:

Input: p1 = [1,0], p2 = [-1,0], p3 = [0,1], p4 = [0,-1] **Output:** true

Constraints:

* `p1.length == p2.length == p3.length == p4.length == 2` * `-104 <= xi, yi <= 104`

Code Snippets

C++:

```
class Solution {  
public:  
    bool validSquare(vector<int>& p1, vector<int>& p2, vector<int>& p3,  
    vector<int>& p4) {  
  
    }  
};
```

Java:

```
class Solution {  
public boolean validSquare(int[] p1, int[] p2, int[] p3, int[] p4) {  
  
}  
}
```

Python3:

```
class Solution:  
    def validSquare(self, p1: List[int], p2: List[int], p3: List[int], p4:  
        List[int]) -> bool:
```