

## 973. K Closest Points to Origin

Medium

Topics

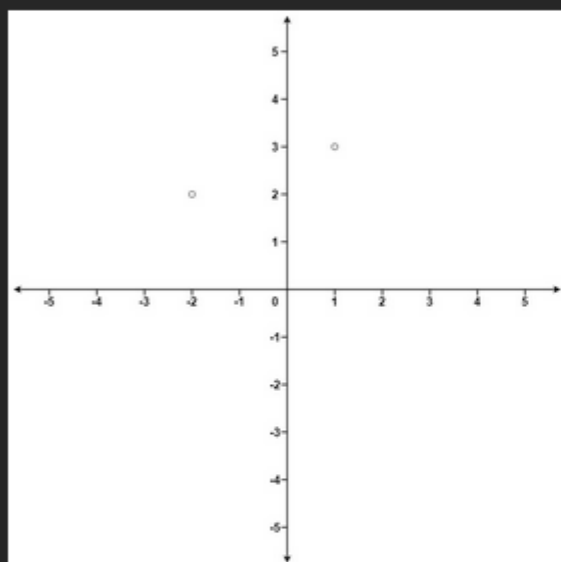
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Given an array of `points` where `points[i] = [xi, yi]` represents a point on the **X-Y** plane and an integer `k`, return the `k` closest points to the origin `(0, 0)`.

The distance between two points on the **X-Y** plane is the Euclidean distance (i.e.,  $\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ ).

You may return the answer in **any order**. The answer is **guaranteed** to be **unique** (except for the order that it is in).

Example 1:



**Input:** `points = [[1,3],[-2,2]]`, `k = 1`

**Output:** `[[-2,2]]`

**Explanation:**

The distance between (1, 3) and the origin is  $\sqrt{10}$ .

The distance between (-2, 2) and the origin is  $\sqrt{8}$ .

Since  $\sqrt{8} < \sqrt{10}$ , (-2, 2) is closer to the origin.

We only want the closest `k = 1` points from the origin, so the answer is just `[[-2,2]]`.

Example 2:

**Input:** `points = [[3,3],[5,-1],[-2,4]]`, `k = 2`

**Output:** `[[3,3],[-2,4]]`

**Explanation:** The answer `[[-2,4],[3,3]]` would also be accepted.

Constraints:

- $1 \leq k \leq \text{points.length} \leq 10^4$
- $-10^4 \leq x_i, y_i \leq 10^4$