

2971. Find Polygon With the Largest Perimeter

Solved ●

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You are given an array of **positive** integers `nums` of length `n`.

A **polygon** is a closed plane figure that has at least `3` sides. The **longest side** of a polygon is **smaller** than the sum of its other sides.

Conversely, if you have `k` ($k \geq 3$) **positive** real numbers `a1`, `a2`, `a3`, ..., `ak` where `a1` ≤ `a2` ≤ `a3` ≤ ... ≤ `ak` **and** `a1` + `a2` + `a3` + ... + `ak-1` > `ak`, then there **always** exists a polygon with `k` sides whose lengths are `a1`, `a2`, `a3`, ..., `ak`.

The **perimeter** of a polygon is the sum of lengths of its sides.

Return the **largest possible perimeter** of a **polygon** whose sides can be formed from `nums`, or `-1` if it is not possible to create a polygon.

Example 1:

Input: `nums = [5,5,5]`**Output:** `15`**Explanation:** The only possible polygon that can be made from `nums` has 3 sides: 5, 5, and 5. The perimeter is 5 + 5 + 5 = 15.

Example 2:

Input: `nums = [1,12,1,2,5,50,3]`**Output:** `12`**Explanation:** The polygon with the largest perimeter which can be made from `nums` has 5 sides: 1, 1, 2, 3, and 5. The perimeter is 1 + 1 + 2 + 3 + 5 = 12.

We cannot have a polygon with either 12 or 50 as the longest side because it is not possible to include 2 or more smaller sides that have a greater sum than either of them.

It can be shown that the largest possible perimeter is 12.

Example 3:

Input: `nums = [5,5,50]`**Output:** `-1`**Explanation:** There is no possible way to form a polygon from `nums`, as a polygon has at least 3 sides and `50` > `5` + `5`.

Constraints:

- `3 ≤ n ≤ 105`
- `1 ≤ nums[i] ≤ 109`

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Yes No

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Hint 1

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