

6155. Find the K-Sum of an Array

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You are given an integer array `nums` and a **positive** integer `k`. You can choose any **subsequence** of the array and sum all of its elements together.

We define the **K-Sum** of the array as the k^{th} **largest** subsequence sum that can be obtained (**not** necessarily distinct).

Return *the K-Sum of the array*.

A **subsequence** is an array that can be derived from another array by deleting some or no elements without changing the order of the remaining elements.

Note that the empty subsequence is considered to have a sum of `0`.

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Hard

Example 1:

Input: `nums = [2,4,-2]`, `k = 5`
Output: `2`
Explanation: All the possible subsequence sums that we can obtain are the following sorted in decreasing order:
`- 6, 4, 4, 2, 2, 0, 0, -2.`
The 5-Sum of the array is `2`.

Example 2:

Input: `nums = [1,-2,3,4,-10,12]`, `k = 16`
Output: `10`
Explanation: The 16-Sum of the array is `10`.

Constraints:

- `n == nums.length`
- `1 <= n <= 105`
- `-109 <= nums[i] <= 109`
- `1 <= k <= min(2000, 2n)`

JavaScript

📄 ↺ ⚙


```
1 const kSum = (a, k) => {
2   let sum = 0, n = a.length, pq = new MaxPriorityQueue({ compare: (x, y) => y[0] - x[0] });
3   for (let i = 0; i < n; i++) {
4     if (a[i] < 0) {
5       a[i] *= -1;
6     } else {
7       sum += a[i];
8     }
9   }
10  if (k == 1) return sum;
11  a.sort((x, y) => x - y);
12  pq.enqueue([sum - a[0], 0]);
13  for (let i = 2; i < k; i++) {
14    let [x, idx] = pq.dequeue();
15    if (idx + 1 < n) {
16      pq.enqueue([x + a[idx] - a[idx + 1], idx + 1]);
17      pq.enqueue([x - a[idx + 1], idx + 1]);
18    }
19  }
20  return pq.front()[0];
21 };
```


☐ Custom Testcase

Use Example Testcases

 Run

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