

493. Reverse Pairs

Given an integer array `nums`, return the number of reverse pairs in the array.

A reverse pair is a pair (i, j) where:

- $0 \leq i < j < \text{nums.length}$ and
- $\text{nums}[i] > 2 * \text{nums}[j]$.

Example 1:

- **Input:** `nums = [1,3,2,3,1]`
- **Output:** `2`
- **Explanation:** *The reverse pairs are:*
 - $(1, 4) \rightarrow \text{nums}[1] = 3, \text{nums}[4] = 1, 3 > 2 * 1$
 - $(3, 4) \rightarrow \text{nums}[3] = 3, \text{nums}[4] = 1, 3 > 2 * 1$

Example 2:

- **Input:** `nums = [2,4,3,5,1]`
- **Output:** `3`
- **Explanation:** *The reverse pairs are:*
 - $(1, 4) \rightarrow \text{nums}[1] = 4, \text{nums}[4] = 1, 4 > 2 * 1$
 - $(2, 4) \rightarrow \text{nums}[2] = 3, \text{nums}[4] = 1, 3 > 2 * 1$
 - $(3, 4) \rightarrow \text{nums}[3] = 5, \text{nums}[4] = 1, 5 > 2 * 1$

Constraints:

- $1 \leq \text{nums.length} \leq 5 * 10^4$
- $-2^{31} \leq \text{nums}[i] \leq 2^{31} - 1$