

# 2208. Minimum Operations to Halve Array Sum

## Description

You are given an array `nums` of positive integers. In one operation, you can choose **any** number from `nums` and reduce it to **exactly** half the number. (Note that you may choose this reduced number in future operations.)

Return *the **minimum** number of operations to reduce the sum of `nums` by **at least** half.*

### Example 1:

```
Input: nums = [5,19,8,1]
Output: 3
Explanation: The initial sum of nums is equal to 5 + 19 + 8 + 1 = 33.
The following is one of the ways to reduce the sum by at least half:
Pick the number 19 and reduce it to 9.5.
Pick the number 9.5 and reduce it to 4.75.
Pick the number 8 and reduce it to 4.
The final array is [5, 4.75, 4, 1] with a total sum of 5 + 4.75 + 4 + 1 = 14.75.
The sum of nums has been reduced by 33 - 14.75 = 18.25, which is at least half of the initial sum, 18.25 >= 33/2 = 16.5.
Overall, 3 operations were used so we return 3.
It can be shown that we cannot reduce the sum by at least half in less than 3 operations.
```

### Example 2:

```
Input: nums = [3,8,20]
Output: 3
Explanation: The initial sum of nums is equal to 3 + 8 + 20 = 31.
The following is one of the ways to reduce the sum by at least half:
Pick the number 20 and reduce it to 10.
Pick the number 10 and reduce it to 5.
Pick the number 3 and reduce it to 1.5.
The final array is [1.5, 8, 5] with a total sum of 1.5 + 8 + 5 = 14.5.
The sum of nums has been reduced by 31 - 14.5 = 16.5, which is at least half of the initial sum, 16.5 >= 31/2 = 15.5.
Overall, 3 operations were used so we return 3.
It can be shown that we cannot reduce the sum by at least half in less than 3 operations.
```

### Constraints:

- $1 \leq \text{nums.length} \leq 10^5$
- $1 \leq \text{nums}[i] \leq 10^7$

