

2870. Minimum Number of Operations to Make Array Empty

Given an array of numbers, you can perform one of two operations.

- Choose 2 numbers of equal value and delete them.
- Choose 3 numbers of equal value and delete them.

Return minimum # of operations to make array empty. -1 if not possible.

Approach #1

1.) Sort the array

2.) Find first count. Subtract 3 until

$$\text{val} = 4 \Rightarrow 2$$

$$\text{val} = 3 \Rightarrow 1$$

$$\text{val} = 2 \Rightarrow 1$$

3.) If value is 1 return -1

It's not actually positive this will work for all conditions. Probably will. Regardless, we sort which is $O(n \log n)$

1.) Count quantity in map.

2.) For each count in map, do exactly step 2.

We actually only have to check for count = 1 and decrement by two until $\text{count} \% 3 = 0$. Else return -1.

```

int minOperations( const std::vector<int> & nums ) {
    std::unordered_map<int, int> m;
    for (const auto num : nums) {
        m[num] += 1;
    }

    int result{0};
    for (auto [key, value] : m) {
        while (value % 3 != 0 & value > 1) {
            value -= 2;
            ++result;
        }
        if (value == 1) {
            return -1;
        }
        result += value / 3;
    }

    return result;
}

```