Distribute Candies

Given an integer array with **even** length, where different numbers in this array represent different **kinds** of candies. Each number means one candy of the corresponding kind. You need to distribute these candies **equally** in number to brother and sister. Return the maximum number of **kinds** of candies the sister could gain.

Example 1:

```
Input: candies = [1,1,2,2,3,3]
Output: 3
Explanation:
There are three different kinds of candies (1, 2 and 3), and two candies for each kind.
Optimal distribution: The sister has candies [1,2,3] and the brother has candies [1,2,3], too.
The sister has three different kinds of candies.
```

Example 2:

```
Input: candies = [1,1,2,3]
Output: 2
Explanation: For example, the sister has candies [2,3] and the brother has candies [1,1].
The sister has two different kinds of candies, the brother has only one kind of candies.
```

Note:

1. The length of the given array is in range [2, 10,000], and will be even.
2. The number in given array is in range [-100,000, 100,000].

Solution 1

```
public class Solution {
    public int distributeCandies(int[] candies) {
        Map<Integer, Integer> candyToCount = new HashMap<>();
        for (int candy : candies) {
            candyToCount.put(candy, candyToCount.getOrDefault(candy, 0) + 1);
        }

        int size = candyToCount.size();

        return size >= candies.length / 2 ? candies.length / 2 : size;
    }
}
```

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Solution 2

```
public int distributeCandies(int[] candies) {
    Set<Integer> set = new HashSet<>();
    for(Integer candie : candies) {
        set.add(candie);
        if(set.size() == candies.length/2) return set.size();
    }
    return Math.min(set.size(), candies.length/2);
}
```

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Solution 3

There are `len(set(candies))` unique candies, and the sister picks only `len(candies) / 2` of them, so she can't have more than this amount.

For example, if there are 5 unique candies, then if she is picking 4 candies, she will take 4 unique ones. If she is picking 7 candies, then she will only take 5 unique ones.

```
def distributeCandies(self, candies):
    return min(len(candies) / 2, len(set(candies)))
```

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