Problem 1.1: Find the Largest Number in an Array

Overview: The goal is to find the largest number in an unsorted array.

Pseudocode Explanation:

1. **Initialize**: Start with the first element of the array as the maximum (`max`).
2. **Iterate**: Loop through each element of the array (`A`).
3. **Compare and Update**: If the current element is greater than `max`, update `max` with this element.
4. **Result**: After the loop, `max` will hold the largest number in the array.

```
Algorithm FindLargest(A):
    max = A[0]
    for each element in A:
        if element > max:
            max = element
    return max
```

Problem 1.2: Find the Second Largest Number in an Array

Overview: The aim is to find the second largest number in an unsorted array.

Pseudocode Explanation:

1. **Initialize**: Start with two variables, `max` and `secondMax`, both set to very small values (like negative infinity).
2. **Iterate**: Loop through each element in the array.
3. **Update Max**: If the current element is greater than `max`, update `secondMax` to `max`'s value and then update `max` with the current element.
4. **Update Second Max**: If the current element is less than `max` but greater than `secondMax`, update `secondMax`.
5. **Result**: After the loop, `secondMax` will hold the second largest number.

```
Algorithm FindSecondLargest(A):
    max = -Infinity
    secondMax = -Infinity
    for each element in A:
        if element > max:
            secondMax = max
            max = element
        else if element > secondMax and element != max:
```

```
            secondMax = element
    return secondMax
```

Problem 2: Find the Missing Number in an Array

↳ 1 cell hidden

Problem 3: Check if Two Sequences are Permutations of the Same Set

↳ 1 cell hidden

Problem 4: Sum of a Range in an Array

↳ 1 cell hidden