Basic Level Questions:

1. **Find the Maximum and Minimum Element in an Array**
    - Given an array, find the smallest and largest element.

Example:

```
Input: [3, 5, 1, 8, 2]
Output: Min = 1, Max = 8
```

2. **Reverse an Array**
    - Reverse a given array in-place.

Example:

```
Input: [1, 2, 3, 4, 5]
Output: [5, 4, 3, 2, 1]
```

3. **Find Second Largest Element**
    - Find the second largest number in an array without sorting.

Example:

```
Input: [10, 20, 4, 45, 99]
Output: 45
```

Intermediate Level Questions:

4. **Move All Zeros to End**
    - Move all zeros in an array to the end while maintaining the relative order of non-zero elements.

Example:

```
Input: [0, 1, 0, 3, 12]
Output: [1, 3, 12, 0, 0]
```

5. **Find Missing Number in an Array (1 to N)**
    - An array contains numbers from 1 to N with one missing number. Find it in **O(N)** time.

Example:

```
Input: [1, 2, 4, 5, 6]
Output: 3
```

6. **Find the First Non-Repeating Element**
    - Find the first element that appears only once in an array.

Example:

```
Input: [4, 5, 1, 2, 1, 2, 5]
Output: 4
```

7.Move all positive numbers to the end.

```
Input:[-1,12,13,0,-19,15,-10]
Output:[-1,-19,-10,0,12,15,13]
```

Advanced Level Questions (LeetCode Style):

8. **Product of Array Except Self (LeetCode #238)**
    - Given an array `nums`, return an array `output` such that `output[i]` is the product of all elements except `nums[i]`, without using division.

Example:

```
Input: [1, 2, 3, 4]
Output: [24, 12, 8, 6]
```

9. **Find the Longest Consecutive Sequence (LeetCode #128)**
    - Find the longest consecutive sequence of numbers in a sorted array.

Example:

```
Input: [100, 4, 200, 1, 3, 2]
Output: 4 (Because [1, 2, 3, 4] is the longest sequence)
```

10. **Two Sum Problem (LeetCode #1)**
    - Find two numbers in an array that add up to a given target sum.

Example:

```
Input: nums = [2, 7, 11, 15], target = 9
```

```
Output: [0, 1] (Indices of 2 and 7)
```

11. **Find the Majority Element (LeetCode #169, Moore's Voting Algorithm)**
    - Find the element that appears more than `n/2` times in an array.

Example:

```
Input: [3, 3, 4, 2, 4, 4, 2, 4, 4]
Output: 4
```

12.finds the primary and secondary diagonals of a square matrix:

```
Input:1 2 3
      4 5 6
      7 8 9

output:Primary Diagonal: 1 5 9
Secondary Diagonal: 3 5 7
```