Array Basics in Java - Test Cases

# 1. Write a Java program to declare and initialize an integer array with 5 elements, and print all the elements using a for loop.

* Test Case 1: [1, 2, 3, 4, 5] - Expected Output: 1 2 3 4 5
* Test Case 2: [-1, -2, -3, -4, -5] - Expected Output: -1 -2 -3 -4 -5
* Test Case 3: [0, 0, 0, 0, 0] - Expected Output: 0 0 0 0 0

# 2. Write a Java program to find the sum of all elements in a given integer array.

* Test Case 1: [1, 2, 3, 4, 5] - Expected Output: 15
* Test Case 2: [10, -10, 10, -10] - Expected Output: 0
* Test Case 3: [0, 0, 0, 0] - Expected Output: 0

# 3. Write a Java program to find the largest element in a given array of integers.

* Test Case 1: [1, 2, 3, 4, 5] - Expected Output: 5
* Test Case 2: [-1, -2, -3, -4, -5] - Expected Output: -1
* Test Case 3: [100, 200, 50, 300] - Expected Output: 300

# 4. Write a Java program to reverse the elements of an array.

* Test Case 1: [1, 2, 3, 4, 5] - Expected Output: [5, 4, 3, 2, 1]
* Test Case 2: [10, 20, 30, 40] - Expected Output: [40, 30, 20, 10]
* Test Case 3: [7, 14, 21] - Expected Output: [21, 14, 7]

# 5. Write a Java program to search for a specific element in an array and print its index. If the element is not found, print a message saying so.

* Test Case 1: Array: [1, 2, 3, 4, 5], Element to search: 3 - Expected Output: 2
* Test Case 2: Array: [10, 20, 30], Element to search: 40 - Expected Output: 'Element not found'
* Test Case 3: Array: [7, 14, 21, 28], Element to search: 28 - Expected Output: 3

# 6. Write a Java program to sort an array of integers in ascending order.

* Test Case 1: [5, 4, 3, 2, 1] - Expected Output: [1, 2, 3, 4, 5]
* Test Case 2: [20, 10, 30] - Expected Output: [10, 20, 30]
* Test Case 3: [100, 50, 150, 0] - Expected Output: [0, 50, 100, 150]

# 7. Write a Java program to copy all elements from one array to another.

* Test Case 1: Source Array: [1, 2, 3], Destination Array: [] - Expected Output: [1, 2, 3]
* Test Case 2: Source Array: [10, 20, 30], Destination Array: [0, 0, 0] - Expected Output: [10, 20, 30]
* Test Case 3: Source Array: [-1, -2, -3], Destination Array: [] - Expected Output: [-1, -2, -3]

# 8. Write a Java program to find the average of all elements in an array of integers.

* Test Case 1: [1, 2, 3, 4, 5] - Expected Output: 3.0
* Test Case 2: [10, 20, 30, 40] - Expected Output: 25.0
* Test Case 3: [-1, 0, 1] - Expected Output: 0.0

# 9. Write a Java program to count the occurrences of a specific element in an array.

* Test Case 1: Array: [1, 2, 2, 3, 2], Element to count: 2 - Expected Output: 3
* Test Case 2: Array: [5, 5, 5, 5], Element to count: 5 - Expected Output: 4
* Test Case 3: Array: [7, 8, 9], Element to count: 10 - Expected Output: 0

# 10. Write a Java program to check if two arrays are equal.

* Test Case 1: Array 1: [1, 2, 3], Array 2: [1, 2, 3] - Expected Output: true
* Test Case 2: Array 1: [1, 2, 3], Array 2: [3, 2, 1] - Expected Output: false
* Test Case 3: Array 1: [10, 20, 30], Array 2: [10, 20, 30, 40] - Expected Output: false