

## Find the Largest Number:

Input: An array or list of numbers.

Output: The largest number in the list.

Example:

- Input: [12, 45, 3, 89, 22]
- Output: "Largest number: 89"
- Input: [7, 2, 9, 5]
- Output: "Largest number: 9"

### Solution 1: Find the Largest number using a For Loop

Code:

```
import java.util.Scanner;

public class LargestNumber {
    // Method to find the largest number in an array using a for loop
    public static int findLargest(int[] numbers) {
        int max = numbers[0]; // Assume the first number is the largest

        // Loop through the array to find the largest number
        for (int i = 1; i < numbers.length; i++) {
            if (numbers[i] > max) {
                max = numbers[i]; // Update max if current number is larger
            }
        }
        return max; // Return the largest number found
    }

    // Main method to take user input and display the largest number
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Take the size of the array as input
        System.out.print("Enter the number of elements: ");
        int size = scanner.nextInt();

        int[] numbers = new int[size];
```

```

        // Input array elements
        System.out.println("Enter the numbers: ");
        for (int i = 0; i < size; i++) {
            numbers[i] = scanner.nextInt();
        }

        // Find and display the largest number
        int largest = findLargest(numbers);
        System.out.println("Largest number: " + largest);

        scanner.close(); // Close the scanner
    }
}

```

Output:

```

Enter the number of elements: 5
Enter the numbers:
23
23
4564
4565
23423
Largest number: 23423

```

### Explanation :

- Input: User inputs the size of the array and the numbers.
- Processing: The program assumes the first number is the largest, then iterates through the array, updating the largest value if a bigger number is found.
- Output: The largest number is displayed.

### Solution 2: Find the Largest number using Java Arrays Class

Code:

```

import java.util.Arrays;
import java.util.Scanner;

public class LargestNumberWithArrays {
    // Method to find the largest number using Arrays.sort() method
    public static int findLargest(int[] numbers) {

```

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```

        Arrays.sort(numbers); // Sort the array in ascending order
        return numbers[numbers.length - 1]; // Return the last element (largest)
    }

// Main method to take user input and display the largest number
public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);

    // Take the size of the array as input
    System.out.print("Enter the number of elements: ");
    int size = scanner.nextInt();

    int[] numbers = new int[size];

    // Input array elements
    System.out.println("Enter the numbers: ");
    for (int i = 0; i < size; i++) {
        numbers[i] = scanner.nextInt();
    }

    // Find and display the largest number
    int largest = findLargest(numbers);
    System.out.println("Largest number: " + largest);

    scanner.close(); // Close the scanner
}
}

```

Output:

```

Enter the number of elements: 7
Enter the numbers:
12
33
-34
0
63
45
Largest number: 78

```

Explanation:

- Input: User enters the size of the array and the elements.
- Processing: The `Arrays.sort()` method sorts the numbers, and the largest number is the last element in the sorted array.
- Output: The largest number is printed.