Function Problem Set

1. **Function to Find Maximum of Three Numbers**: Write a Python function that finds the maximum of three numbers.

   Sample Input: **max_of_three(5, 10, 3)**

   Expected Output: **10**

2. **Function to Sum Numbers in a List**: Write a Python function that sums all the numbers in a list.

   Sample Input: **sum_list([8, 2, 3, 0, 7])**

   Expected Output: **20**

3. **Function to Multiply Numbers in a List**: Write a Python function that multiplies all the numbers in a list.

   Sample Input: **multiply_list([8, 2, 3, -1, 7])**

   Expected Output: **-336**

4. **Program to Reverse a String**: Write a Python program that reverses a given string.

   Sample Input: **"1234abcd"**

   Expected Output: **"dcba4321"**

5. **Function to Calculate Factorial**: Write a Python function to calculate the factorial of a non-negative integer and return the factorial value.

   Sample Input: **factorial(5)**

   Expected Output: **120**

6. **Function to Check Number within Range**: Write a Python function that checks whether a number falls within a given range.

   Sample Input: **in_range(5, 1, 10)**

   Expected Output: **True**

7. **Function to Count Upper and Lower Case Characters**: Write a Python function that accepts a string and counts the number of upper and lower case letters.

   Sample Input: **count_case('The quick Brow Fox')**

   Expected Output: **No. of Upper case characters: 3, No. of Lower case characters: 12**

8. **Function to Return Unique Elements from a List**: Write a Python function that takes a list and returns a new list with distinct elements from the first list.

   Sample Input: **unique_elements([1, 2, 3, 3, 3, 3, 4, 5])**

   Expected Output: **[1, 2, 3, 4, 5]**

9. **Function to Check Prime Number**: Write a Python function that takes a number as a parameter and checks whether the number is prime or not.

   Sample Input: **is_prime(7)**

   Expected Output: **True**

10. **Program to Print Even Numbers from a List**: Write a Python program to print the even numbers from a given list.

    Sample Input: **even_numbers([1, 2, 3, 4, 5, 6, 7, 8, 9])**

    Expected Output: **[2, 4, 6, 8]**

11. **Function to Check Perfect Number**: Write a Python function to check whether a number is "Perfect" or not.

    Sample Input: **is_perfect(28)**

    Expected Output: **True**

12. **Function to Check Palindrome**: Write a Python function that checks whether a passed string is a palindrome or not.

    Sample Input: **is_palindrome("madam")**

    Expected Output: **True**