Practice Problems: Functions and Modules

1. **Basic Function**: Write a function that prints "Hello, Python!" when called.

2. **Sum of Two Numbers**: Write a function that takes two numbers as arguments and returns their sum.

3. **Factorial Function**: Write a function to calculate the factorial of a number using recursion.

4. **Prime Number Checker**: Write a function that checks if a given number is prime.

5. **Fibonacci Series Generator**: Write a function that generates the first N Fibonacci numbers.

6. **Largest of Three Numbers**: Write a function that takes three numbers and returns the largest among them.

7. **Palindrome Checker**: Write a function that checks if a given string is a palindrome.

8. **Armstrong Number Checker**: Write a function to check if a given number is an Armstrong number.

9. **Power Function**: Write a function that calculates the power of a number using recursion.

10. **Simple Calculator**: Write a function that takes two numbers and an operator (+, -, *, /) as input and returns the result.

11. **Even or Odd Function**: Write a function that checks if a number is even or odd.

12. **Find GCD Using Functions**: Write a function to find the Greatest Common Divisor (GCD) of two numbers.

13. **LCM Function**: Write a function that computes the Least Common Multiple (LCM) of two numbers.

14. **Reversing a String**: Write a function that takes a string as input and returns the reversed string.

15. **Counting Vowels in a String**: Write a function that counts the number of vowels in a given string.

16. **Sum of Digits Function**: Write a function that calculates the sum of digits of a given number.

17. **Default Argument Function**: Write a function where one parameter has a default value and demonstrate its use.

18. **Using args in Functions*: Write a function that takes any number of arguments and returns their sum.

19. **Using **kwargs in Functions**: Write a function that accepts keyword arguments and prints them.

20. **Using the Math Module**: Write a program that uses the math module to find the square root, factorial, and sine of a given number.

21. **Using the Random Module**: Write a function that generates a random number between a given range.

22. **Custom Module Creation**: Create a Python module with a few mathematical functions and import them in another script.

23. **Lambda Function for Squaring**: Write a lambda function that returns the square of a number.

24. **Lambda Function for Sorting**: Write a lambda function to sort a list of tuples based on the second element.

25. **Filter and Map Functions**: Write a program using map() and filter() to process a list of numbers.