1. Write a Python Program to Display Fibonacci Sequence Using Recursion?

Ans .

def fibonacci\_recursive(n):

if n <= 0:

return []

elif n == 1:

return [0]

elif n == 2:

return [0, 1]

else:

fib\_sequence = fibonacci\_recursive(n - 1)

fib\_sequence.append(fib\_sequence[-1] + fib\_sequence[-2])

return fib\_sequence

# Get input from the user

num\_terms = int(input("Enter the number of terms in the Fibonacci sequence: "))

# Display the Fibonacci sequence

fibonacci\_sequence = fibonacci\_recursive(num\_terms)

print("Fibonacci Sequence:", fibonacci\_sequence)

1. Write a Python Program to Find Factorial of Number Using Recursion?

Ans.

def factorial(n):

if n == 0 or n == 1:

return 1

else:

return n \* factorial(n - 1)

num = int(input("Enter a number: "))

if num < 0:

print("Factorial is not defined for negative numbers.")

else:

print(f"The factorial of {num} is: {factorial(num)}")

1. Write a Python Program to calculate your Body Mass Index?

Ans.

def calculate\_bmi(weight, height):

return weight / (height \* height)

weight = float(input("Enter your weight in kilograms: "))

height = float(input("Enter your height in meters: "))

bmi = calculate\_bmi(weight, height)

print(f"Your Body Mass Index (BMI) is: {bmi:.2f}")

1. Write a Python Program to calculate the natural logarithm of any number?

Ans.

import math

num = float(input("Enter a number: "))

if num <= 0:

print("Natural logarithm is only defined for positive numbers.")

else:

natural\_log = math.log(num)

print(f"The natural logarithm of {num} is: {natural\_log:.4f}")

1. Write a Python Program for cube sum of first n natural numbers?

Ans.

def cube\_sum(n):

return sum(i\*\*3 for i in range(1, n+1))

num = int(input("Enter a number (n): "))

if num < 0:

print("Please enter a positive number.")

else:

result = cube\_sum(num)

print(f"The cube sum of first {num} natural numbers is: {result}")