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

def fibonacci(n):

if n <= 1:

return n

else:

return fibonacci(n-1) + fibonacci(n-2)

# take input from the user

nterms = int(input("Enter the number of terms: "))

# check if the input is valid

if nterms <= 0:

print("Invalid input. Please enter a positive integer.")

else:

print("Fibonacci sequence:")

for i in range(nterms):

print(fibonacci(i))

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

def factorial(n):

if n == 0:

return 1

else:

return n \* factorial(n-1)

# take input from the user

num = int(input("Enter a non-negative integer: "))

# check if the input is valid

if num < 0:

print("Invalid input. Please enter a non-negative integer.")

else:

result = factorial(num)

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

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

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

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

# calculate BMI

bmi = weight / (height \*\* 2)

# print result

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

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

import math

x = float(input("Enter a positive number: "))

if x <= 0:

print("Invalid input. Please enter a positive number.")

else:

ln\_x = math.log(x)

print(f"The natural logarithm of {x} is {ln\_x:.2f}")

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

n = int(input("Enter a positive integer: "))

sum = 0

if n <= 0:

print("Invalid input. Please enter a positive integer.")

else:

for i in range(1, n+1):

sum += i\*\*3

print(f"The cube sum of the first {n} natural numbers is {sum}.")