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

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

# initialize factorial to 1

factorial = 1

# loop from 1 to num

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

factorial = factorial \* i

# print the factorial

print("The factorial of", num, "is", factorial)

1. **Write a Python Program to Display the multiplication Table?**

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

# loop from 1 to 10

for i in range(1, 11):

print(num, "x", i, "=", num\*i)

1. **Write a Python Program to Print the Fibonacci sequence?**

# take input from user

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

# initialize variables

a, b = 0, 1

# check if the number of terms is valid

if n <= 0:

print("Please enter a positive integer.")

elif n == 1:

print("Fibonacci sequence upto", n, "term:")

print(a)

else:

print("Fibonacci sequence:")

# print the first 2 terms

print(a)

print(b)

# loop from 3rd term to nth term

for i in range(2, n):

c = a + b

# print the ith term

print(c)

a, b = b, c

1. **Write a Python Program to Check Armstrong Number?**

# take input from user

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

# find the number of digits

num\_digits = len(str(num))

# initialize sum to 0

sum = 0

# calculate sum of nth powers of each digit

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* num\_digits

temp //= 10

# check if the number is Armstrong or not

if num == sum:

print(num, "is an Armstrong number")

else:

print(num, "is not an Armstrong number")

1. **Write a Python Program to Find Armstrong Number in an Interval?**

# take input from user

lower = int(input("Enter the lower bound of the interval: "))

upper = int(input("Enter the upper bound of the interval: "))

print("Armstrong numbers in the interval", lower, "and", upper, "are:")

for num in range(lower, upper + 1):

# find the number of digits

num\_digits = len(str(num))

# initialize sum to 0

sum = 0

# calculate sum of nth powers of each digit

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* num\_digits

temp //= 10

# check if the number is Armstrong or not

if num == sum:

print(num)

1. **Write a Python Program to Find the Sum of Natural Numbers?**

# take input from user

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

# initialize sum to 0

sum = 0

# check if the number is valid

if n <= 0:

print("Please enter a positive integer.")

else:

# calculate sum of first n natural numbers

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

sum += i

print("The sum of first", n, "natural numbers is:", sum)