Work sheet 5

Q1/ Write Python Program to print numbers from 5000 to 1 and then prints total sum of them.

numbers = range (5000, 0, -1)  
sum = 0  
  
for number in numbers:  
 print(number)  
 sum += number  
  
print ("The sum of all numbers from 5000 to 1 is:", sum)

Q2/ Write Python Program to print numbers between 10 and 10000 and then prints total multiplication of them.

numbers = range (10, 10001)  
x = 1  
for x in numbers:  
 print(x)  
 x += x  
print("The product of all numbers between 10 and 10000 is:", x)

Q3/ Write Python Program to print the square of all numbers from 1 to 10.

numbers = range(1, 11)  
  
for number in numbers:  
 print("The square of", number, "is", number\*\*2)

Q4/

Q5/ Write Python Program to read number. And check if it's prime or not prime.

def is prime(number):

if number < 2:

return False

for i in range(2, int(number\*\*0.5) + 1):

if number % i == 0:

return False

return True

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

if is prime(num):

print(f"{num} is a prime number.")

else:

print(f"{num} is not a prime number.")

Q6/ Write an algorithm to find 𝑋𝑌 i.e., power (X, Y).

def power(X, Y):

result = 1

for \_ in range(Y):

result \*= X

return result

base = int(input("Enter the base (X): "))

exponent = int(input("Enter the exponent (Y): "))

result = power(base, exponent)

print(f"{base}^{exponent} is: {result}")

Q7/ Write Python Program to read n of number and print how many even and odd number in n.

def is\_even(num):

return num % 2 == 0

n = int(input("Enter the value of n: "))

even\_count = 0

odd\_count = 0

for i in range(n):

num = int(input(f"Enter number {i+1}: "))

if is\_even(num):

even\_count += 1

else:

odd\_count += 1

print(f"\nNumber of even numbers: {even\_count}")

print(f"Number of odd numbers: {odd\_count}")

Q8/ Write Python Program which generates first 50 items of the Fibonacci series: 1, 1, 2, 3, 5, 8, 13, 21…?

def generate\_fibonacci(n):

fibonacci\_series = [1, 1]

for i in range(2, n):

next\_number = fibonacci\_series[-1] + fibonacci\_series[-2]

fibonacci\_series.append(next\_number)

return fibonacci\_series

n = 50

fibonacci\_series = generate\_fibonacci(n)

print(f"The first 50 items of the Fibonacci series are:\n{fibonacci\_series}")

Q9/ Write Python Program for finding the sum of the numbers 3, 9, 27, 81, 243 …, n

def geometric\_sum(a, r, n):

if r == 1:

return a \* n

sum\_result = a \* (pow(r, n) - 1) // (r - 1)

return sum\_result

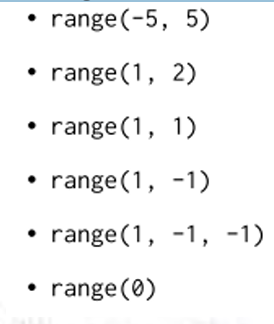
first\_term = 3

common\_ratio = 3

number\_of\_terms = int(input("Enter the value of n: "))

series\_sum = geometric\_sum(first\_term, common\_ratio, number\_of\_terms)

print(f"The sum of the series is: {series\_sum}")

Q10/ Find the output of range function for following:

ANS:

* (-5,-4,-3,-2,-1,0,1,2,3,4)
* (1)
* (NOTHING)
* (NOTHING)
* (1,0)
* (NOTHING)