

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

Ans:

```
] : def factorial(num):
    factorial = 1
    if num < 0:
        print("Sorry, factorial does not exist for negative numbers")
    elif num == 0:
        print("The factorial of 0 is 1")
    else:
        for i in range(1,num + 1):
            factorial = factorial*i
        print("The factorial of",num,"is",factorial)
    num = int(input("Enter a number: "))
    factorial(num)
```

```
Enter a number: 6
The factorial of 6 is 720
```

2. Write a Python Program to Display the multiplication Table?

Ans:

```
] : def multiplication_table(num):
    for i in range(1, 11):
        print(num, 'x', i, '=', num*i)
    number = int(input("Display multiplication table of: "))
    multiplication_table(number)
```

```
Display multiplication table of: 5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
```

3. Write a Python Program to Print the Fibonacci sequence?

Ans:

```
8] : def fibonacci(nterms):
    n1, n2 = 0, 1
    count = 0
    if nterms <= 0:
        print("Please enter a positive integer")
    elif nterms == 1:
        print("Fibonacci sequence upto",nterms,":")
        print(n1)
    else:
        print("Fibonacci sequence:")
        while count < nterms:
            print(n1)
            nth = n1 + n2
            # update values
            n1 = n2
            n2 = nth
            count += 1
    nterms = int(input("How many terms: "))
    fibonacci(nterms)
```

```
How many terms: 5
Fibonacci sequence:
0
1
1
2
3
```

4. Write a Python Program to Check Armstrong Number?

Ans:

```
]]: def armstrong(num):
    order = len(str(num))
    sum = 0
    temp = num
    while temp > 0:
        digit = temp % 10
        sum += digit ** order
        temp //= 10

    if num == sum:
        print(num, "is an Armstrong number")
    else:
        print(num, "is not an Armstrong number")

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

Enter a number: 8208
8208 is an Armstrong number

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

Ans:

```
]]: def armstrong_interval(lower, upper):
    print("Armstrong numbers between", lower, "and", upper, "are:")
    for num in range(lower, upper + 1):
        order = len(str(num))
        sum = 0
        temp = num
        while temp > 0:
            digit = temp % 10
            sum += digit ** order
            temp //= 10

        if num == sum:
            print(num)
lower_number = int(input("Enter a lower range number: "))
upper_number = int(input("Enter an upper range number: "))
armstrong_interval(lower_number, upper_number)
```

Enter a lower range number: 6354
Enter an upper range number: 8547
Armstrong numbers between 6354 and 8547 are:
8208

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

Ans:

```
]]: def natural_sum(num):
    if num < 0:
        print("Enter a positive number")
    else:
        sum = 0
        # use while loop to iterate until zero
        while(num > 0):
            sum += num
            num -= 1
        print("The sum is", sum)
num = int(input("Enter a number: "))
natural_sum(num)
```

Enter a number: 16
The sum is 136