EX 1 :-

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

if num % 2 == 0:

print("Even")

else:

print("Odd")

EX 2 :-

a = float(input("First: "))

b = float(input("Second: "))

op = input("Op (+ - \* /): ")

if op == '+': print(a + b)

elif op == '-': print(a - b)

elif op == '\*': print(a \* b)

elif op == '/': print(a / b if b != 0 else "Can't divide by 0")

else: print("Wrong op")

Ex 3:-

year = int(input("Enter year: "))

print("Leap Year" if year % 4 == 0 and (year % 100 != 0 or year % 400 == 0) else "Not a Leap Year")

Ex 4:-

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

f = 1

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

f \*= i

print("Factorial:", f)

Ex 5:-

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

a, b = 0, 1

for \_ in range(n):

print(a, end=' ')

a, b = b, a + b

Ex 6:-

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

s = sum(int(d)\*\*3 for d in str(num))

print("Armstrong" if s == num else "Not Armstrong")

Ex 7:-

lst = [1, 2, 3, 4, 5]

n = int(input("Enter how many times to rotate: "))

lst = lst[n:] + lst[:n]

print("Rotated List:", lst)

Ex 8:-

t = (10, 20, 30, 40)

item = int(input("Enter item: "))

print("Found" if item in t else "Not found")

Ex 9:-

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

d = {x: x\*x for x in range(1, n+1)}

print(d)

Ex 10:-

set1 = {1, 2, 3, 4}

set2 = {3, 4, 5, 6}

print("Union:", set1 | set2)

print("Intersection:", set1 & set2)

print("Subtraction:", set1 - set2)

print("Symmetric Difference:", set1 ^ set2)

Ex 11:-

nums = [5, 8, 3, 9, 1]

print("Maximum:", max(nums))

Ex 12:-

s = input("Enter a string: ")

print("Uppercase:", s.upper())

print("Lowercase:", s.lower())

print("Length:", len(s))

print("Reversed:", s[::-1])

Ex 13:-

from array import array

a = array('i', [1, 2, 3, 4, 5])

print("Sum:", sum(a))

Ex 14:-

a = [[1, 2], [3, 4]]

b = [[5, 6], [7, 8]]

res = [[0, 0], [0, 0]]

for i in range(2):

for j in range(2):

for k in range(2):

res[i][j] += a[i][k] \* b[k][j]

print("Result:", res)

Ex 15:-

def swap(x, y):

x, y = y, x

print("After swap: x =", x, "y =", y)

a = int(input("Enter x: "))

b = int(input("Enter y: "))

swap(a, b)

Ex 16:-

from functools import reduce

nums = list(range(1, 6)) # range

squares = list(map(lambda x: x\*x, nums)) # map + lambda

evens = list(filter(lambda x: x % 2 == 0, nums)) # filter + lambda

total = reduce(lambda x, y: x + y, nums) # reduce + lambda

print("Nums:", nums)

print("Squares:", squares)

print("Evens:", evens)

print("Sum:", total)