4.Write a Python program to create a simple arithmetic calculator that takes two numbers and an operator (+, -, *, /) as input from the user and returns the result. Use separate functions for each operation, and ensure the program handles invalid operators and division by zero gracefully

input:

```python
def add(a, b):
    return a + b

def subtract(a, b):
    return a - b

def multiply(a, b):
    return a * b

def divide(a, b):
    if b == 0:
        return "Error: Division by zero is not allowed."
    return a / b
def calculator():
    try:
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))
        operator = input("Enter an operator (+, -, *, /): ")

        if operator == '+':
            result = add(num1, num2)
        elif operator == '-':
            result = subtract(num1, num2)
```

```python
        elif operator == '*':
            result = multiply(num1, num2)
        elif operator == '/':
            result = divide(num1, num2)
        else:
            result = "Error: Invalid operator."

        print("Result:", result)

    except ValueError:
        print("Error: Please enter valid numbers.")
calculator()
```

Output:

```
Enter first number: 10
Enter second number: 20
Enter an operator (+, -, *, /): /
Result: 0.5
```

5.Write a Python program using simple statements and expressions (exchange the values of two variables, circulate the values of n variables and distance between two points)

Input:

```python
import math
# 1. Exchange the values of two variables
print("1. Exchange values of two variables")
a = int(input("Enter value of a: "))
b = int(input("Enter value of b: "))
print("Before swapping: a =", a, ", b =", b)
a, b = b, a
print("After swapping: a =", a, ", b =", b)

# 2. Circulate the values of n variables
print("\n2. Circulate values of three variables (a -> b -> c ->
    a)")
a = int(input("Enter value of a: "))
b = int(input("Enter value of b: "))
c = int(input("Enter value of c: "))
print("Before circulation: a =", a, ", b =", b, ", c =", c)
a, b, c = c, a, b
print("After circulation: a =", a, ", b =", b, ", c =", c)

# 3. Distance between two points
print("\n3. Distance between two points")
x1 = float(input("Enter x1: "))
y1 = float(input("Enter y1: "))
```

```python
x2 = float(input("Enter x2: "))
y2 = float(input("Enter y2: "))

distance = math.sqrt((x2 - x1)**2 + (y2 - y1)**2)
print(f"Distance between points ({x1}, {y1}) and ({x2}, {y2}) is
    : {distance:.2f}")
```

Output:

```
1. Exchange values of two variables
Enter value of a: 10
Enter value of b: 20
Before swapping: a = 10 , b = 20
After swapping: a = 20 , b = 10

2. Circulate values of three variables (a -> b -> c -> a)
Enter value of a: 20
Enter value of b: 10
Enter value of c: 30
Before circulation: a = 20 , b = 10 , c = 30
After circulation: a = 30 , b = 20 , c = 10

3. Distance between two points
Enter x1: 1
Enter y1: 2
Enter x2: 2
Enter y2: 1
Distance between points (1.0, 2.0) and (2.0, 1.0) is: 1.41
```

6.Write a program to perform n Fibonacci series

Input:

```python
def fibonacci_series(n):
    a, b = 0, 1
    print("Fibonacci Series:")
    for _ in range(n):
        print(a, end=" ")
        a, b = b, a + b


n = int(input("Enter how many terms you want in the Fibonacci
    series: "))

if n <= 0:
    print("Please enter a positive number.")
else:
    fibonacci_series(n)
```

Output:

```
Enter how many terms you want in the Fibonacci series: 10
Fibonacci Series:
0 1 1 2 3 5 8 13 21 34
```