**Exercise 4: Arrange-Act-Assert (AAA) Pattern, Test Fixtures, Setup and Teardown Methods in JUnit**

**Code**

**Calculator.java**

package com.example;

public class Calculator {

    public int add(int a, int b) {

        return a + b;

    }

    public int subtract(int a, int b) {

        return a - b;

    }

}

**CalculatorTest.java**

package com.example;

import org.junit.After;

import org.junit.Before;

import org.junit.Test;

import static org.junit.Assert.assertEquals;

public class CalculatorTest {

    private Calculator calculator;

    @Before

    public void setUp(){

        calculator = new Calculator();

        System.out.println("Setup complete");

    }

    @After

    public void tearDown(){

        System.out.println("Teardown complete");

    }

    // Test using AAA pattern

    @Test

    public void testAddition(){

        // Arrange

        int a = 5;

        int b = 3;

        // Act

        int result = calculator.add(a, b);

        // Assert

        assertEquals(8, result);

    }

    @Test

    public void testSubtraction(){

        // Arrange

        int a = 10;

        int b = 4;

        // Act

        int result = calculator.subtract(a, b);

        // Assert

        assertEquals(6, result);

    }

}

**Output**

Testing using AAA (Arrange-Act-Assert) Patter

Using the @Before and @After Annotations for setup and teardown methods

