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

Code:

package com.example;

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

import static org.junit.Assert.\*;

public class CalculatorTesting {

    private Calculator calculator;

    @Before

    public void setUp() {

        // Arrange: Setup before each test

        calculator = new Calculator();

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

    }

    @After

    public void tearDown() {

        // Clean up after each test

        calculator = null;

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

    }

    @Test

    public void testAddition() {

        // Arrange done in setUp()

        // Act

        int result = calculator.add(2, 3);

        // Assert

        assertEquals(5, result);

    }

    @Test

    public void testAdditionWithZero() {

        // Act

        int result = calculator.add(0, 5);

        // Assert

        assertEquals(5, result);

    }

}

Output:



