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

**Code:**

***CalculatorTest.java***

package junitdemo;

import static org.junit.Assert.\*;

import org.junit.Before;

import org.junit.After;

import org.junit.Test;

public class CalculatorTest {

private Calculator calculator;

*@Before*

public void setUp() {

calculator = new Calculator();

System.***out***.println("Before each test - calculator created");

}

*@After*

public void tearDown() {

calculator = null;

System.***out***.println("After each test - calculator set to null");

}

*@Test*

public void testAdd() {

int result = calculator.add(10, 5);

*assertEquals*(15, result);

}

*@Test*

public void testAddNegative() {

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

*assertEquals*(-5, result);

}

}

***Calculator.java***

package junitdemo;

public class Calculator {

public int add(int a, int b) {

return a + b;

}

}

***pom.xml***

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>com.junitexample</groupId>

<artifactId>junitdemo</artifactId>

<version>0.0.1-SNAPSHOT</version>

<dependencies>

<dependency>

<groupId>junit</groupId>

<artifactId>junit</artifactId>

<version>4.13.2</version>

<scope>test</scope>

</dependency>

</dependencies>

</project>

**Output:**

