

Week_2_ Exercise 4: Arrange-Act-Assert (AAA) Pattern, Test Fixtures, Setup and Teardown Methods in JUnit

```
src > test > java > AssertionsTest.java > AssertionsTest > tearDown()
1  import org.junit.jupiter.api.*;
2  import static org.junit.jupiter.api.Assertions.*;
3
4  class Calculator {
5      int add(int a, int b) {
6          return a + b;
7      }
8
9      int subtract(int a, int b) {
10         return a - b;
11     }
12
13     int multiply(int a, int b) {
14         return a * b;
15     }
16
17     int divide(int a, int b) {
18         if (b == 0)
19             throw new IllegalArgumentException(s:"Cannot divide by zero");
20         return a / b;
21     }
22 }
23
24 public class AssertionsTest {
25
26     Calculator calc;
27
28     @BeforeEach
29     void setUp() {
30         calc = new Calculator();
31     }
32
33     @AfterEach
34     void tearDown() {
35         calc = null;
36     }
37
38     @Test
39     void additionTest() {
40
41         int result = calc.add(a:10, b:5);
42         assertEquals(expected:15, result);
43     }
44
45     @Test
46     void subtractionTest() {
47         int result = calc.subtract(a:10, b:5);
48         assertEquals(expected:5, result);
49     }
50
51     @Test
52     void multiplicationTest() {
53         int result = calc.multiply(a:3, b:4);
54         assertEquals(expected:12, result);
55     }
56
57     @Test
58     void divisionTest() {
59         int result = calc.divide(a:20, b:4);
60         assertEquals(expected:5, result);
61     }
62
63     @Test
64     void divideByZeroTest() {
65         assertThrows(expectedType:IllegalArgumentException.class, () -> calc.divide(a:10, b:0));
66     }
67 }
```