Week2_AssertionTest.java

```java
3
4    public class AssertionsTest {
5
6        static class Calculator {
7            int add(int a, int b) {
8                return a + b;
9            }
10
11           int subtract(int a, int b) {
12               return a - b;
13           }
14
15           int multiply(int a, int b) {
16               return a * b;
17           }
18
19           int divide(int a, int b) {
20               if (b == 0)
21                   throw new IllegalArgumentException(s:"Cannot divide by zero");
22               return a / b;
23           }
24       }
25
26       Calculator calc = new Calculator();
27
28       @Test
29       void testAddition() {
30           assertEquals(expected:9, calc.add(a:4, b:5));
31       }
32
33       @Test
34       void testSubtraction() {
35           assertEquals(expected:1, calc.subtract(a:5, b:4));
36       }
37
38       @Test
39       void testMultiplication() {
40           assertEquals(expected:20, calc.multiply(a:4, b:5));
41       }
42
43       @Test
44       void testDivision() {
45           assertEquals(expected:2, calc.divide(a:10, b:5));
46       }
47
48       @Test
49       void testDivideByZero() {
50           assertThrows(expectedType:IllegalArgumentException.class, () -> calc.divide(a:10, b:0));
51       }
52
53       @Test
54       void testArrayEquality() {
55           int[] expected = { 1, 2, 3 };
56           int[] actual = { 1, 2, 3 };
57           assertArrayEquals(expected, actual);
58       }
59
60       @Test
61       void testBooleanValues() {
62           assertTrue(7 > 2);
63           assertFalse(3 > 5);
64       }
65
66       @Test
67       void testNulls() {
68           String s = null;
69           assertNull(s);
70           assertNotNull(actual:"Hello");
71       }
72
73       @Test
74       void testStringEquality() {
75           assertEquals(expected:"JUnit", actual:"JUnit");
76       }
77   }
```