# SOFTWARE TESTING

## Part 3

a) **Black box Testing**

i. **Using worst case BVA, identify test cases of the program**

7^3= 343

So there is 343 test Cases in worst case analysis. Because 7 test case and 3 para meters

ii. **Implement 50% of test cases of each function**

### Using strong robust equivalence classes

**Test Cases for the function Add()**

| Case | Number | Number2 | Expected Result |
|---|---|---|---|
| 1 | -1 | 45 | Invalid |
| 2 | 1 | 51 | Valid |
| 3 | 2 | 52 | Valid |
| 4 | 45 | 80 | Valid |
| 5 | 49 | 199 | Valid |
| 6 | 50 | 100 | Valid |
| 7 | 55 | 105 | Invalid |

**Test Cases for the function Sub()**

| Case | Number | Number2 | Expected Result |
|---|---|---|---|
| 1 | 49 | -1 | Invalid |
| 2 | 51 | 1 | Valid |
| 3 | 52 | 2 | Valid |
| 4 | 70 | 45 | Valid |
| 5 | 199 | 49 | Valid |
| 6 | 100 | 50 | Valid |
| 7 | 110 | 55 | Invalid |

**Test Cases for the function Mul()**

| Case | Number | Number2 | Expected Result |
|---|---|---|---|
| 1 | -1 | 100 | Invalid |
| 2 | 1 | 101 | Valid |
| 3 | 2 | 102 | Valid |
| 4 | 80 | 180 | Valid |
| 5 | 199 | 199 | Valid |
| 6 | 100 | 200 | Valid |
| 7 | 102 | 210 | Invalid |

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### Test Cases for the function Div()

| Case | Number | Number2 | Expected Result |
|---|---|---|---|
| 1 | 29 | 0 | Invalid |
| 2 | 30 | 1 | Valid |
| 3 | 31 | 2 | Valid |
| 4 | 40 | 20 | Valid |
| 5 | 49 | 28 | Valid |
| 6 | 50 | 29 | Valid |
| 7 | 51 | 30 | Invalid |

### Test Cases for the function Average()

| Case | Number1 | Number2 | Number3 | Expected Result |
|---|---|---|---|---|
| 1 | 0 | 100 | 200 | Invalid |
| 2 | 1 | 101 | 201 | Valid |
| 3 | 2 | 102 | 202 | Valid |
| 4 | 50 | 150 | 250 | Valid |
| 5 | 199 | 199 | 299 | Valid |
| 6 | 100 | 200 | 300 | Valid |
| 7 | 101 | 201 | 301 | Invalid |

iii. **Using strong robust equivalence classes, identify test cases of the program and number of reduced test cases as compare to robust worst case BVA**.

32 Test Cases is made by using strong robust equivalence classes, and by worst BVA we get 343 cases.