Problem 5

1 Test Cases

1.1 Test Case - 1

- **Function:** Beta.validateInputs(double)
- **Input:** Beta.validateInputs(34)
- **Expected:** False
- **Result:** Pass
- **Traceability:** R2, R6

1.2 Test Case - 2

- **Function:** Beta.power1(double,double)
- **Input:** Beta.power1(2,3)
- **Expected:** 8
- **Result:** Pass
- **Traceability:** R5

1.3 Test Case - 3

- **Function:** Beta.factorial(double)
- **Input:** Beta.factorial(6)
- **Expected:** 720
- **Result:** Pass
- **Traceability:** R7

1.4 Test Case - 4

- **Function:** Beta.logn(double)
- **Input:** Beta.logn(2)
- **Expected:** 0.693147
- **Result:** Pass
- **Traceability:** R8

1.5 Test Case - 5

- **Function:** Beta.calculatePower(double,double)
- **Input:** Beta.calculatePower(10,0.5)
- **Expected:** 3.162277
- **Result:** Pass
- **Traceability:** R5

1.6 Test Case - 6

- **Function:** Beta.calculateSquareRoot(double)
- **Input:** Beta.calculateSquareRoot(2)
- **Expected:** 1.41
- **Result:** Pass
- **Traceability:** R9

1.7 Test Case - 7

- **Function:** Beta.calculateGammaStirling(double)
- **Input:** Beta.calculateGammaStirling(1.5)
- **Expected:** 0.8389
- **Result:** Pass, not accurate
- **Traceability:** R4

1.8 Test Case - 8

- **Function:** Beta.calculateBetaStirling(double,double,double)
- **Input:** Beta.calculateBetaStirling(10,20,30)
- **Expected:** 4.9494E-9
- **Result:** Pass, not accurate
- **Traceability:** R1, R2, R3, R6

1.9 Test Case - 9

- **Function:** Beta.calculateGammaFactorial(double)
- **Input:** Beta.calculateGammaFactorial(12)
- **Expected:** 3.99168E7
- **Result:** Pass, highly accurate
- **Traceability:** R4

1.10 Test Case - 10

- **Function:** Beta.calculateBetaFactorial(double,double,double)
- **Input:** Beta.calculateBetaFactorial(10,20,30)
- **Expected:** 4.9925087E-9
- **Result:** Pass, highly accurate
- **Traceability:** R1, R2, R3, R6