Testing of Function F3

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Test case analysis for function f(x) = sinh(x)

The approach ,I have used is defined below,

The summary tables for the test cases are described below which compares the actual output with the expected output based on input and give status.

Test Case Method : testInitCalculationInvalidInput()
This unit test is tested on improper inputs like string and combinations of special characters and it return the expected response.

Test Case Method : testInitCalculationInvalidUpperBoundInput()
This test task was to identify the upper bound value and if it exceeds the threshold value this unit function is returning the expected response.

Test Case Method : testInitCalculationValidInput()
This test is expected to receive the proper value as input and return the result, but this unit function works for some real integers.

Input	Expected Result	Actual Result	Status
9	4051.54190208	3991.013168667828000	Failed
1	1.1752011936438	1.1752011936438	Passed

Test Case Method : testEPowerXFinite()
This test case is expected to calculate Euler value with respective finite value of x and it is returning the expected value of e^x.

Test Case Method : testCalculateSinh()
This test is use for calculating value of sinh which accepts 2 parameters e^x and e^-x and returns the expected value for some real number of sinh function.

Input	Expected Result	Actual Result	Status
9	4051.54190208	3991.013168667828000	Failed
1	1.1752011936438	1.1752011936438	Passed

Test Case Method : testSignificantDecimalPoints()

This test just verifies that input given by user, contains max 15 decimal significant points which will then use as processedInput.

Input	Expected Result	Actual Result	Status
0.00000000000000000000	0.000000000000000	0.000000000000000	Passed
0.12	0.12	0.12	Passed

Test Case Method : testValidateInputRangeInvalidInput()

This test is working correctly for detecting that the input value should lie within the given interval.

Input	Expected Result	Actual Result	Status
2*Double.MAX_VALUE	false	false	Passed

Test Case Method : testValidateOutputRange

This test is working properly for the cases where output reaches to too large value which cannot be stored or not in range.

Input	Expected Result	Actual Result	Status
Double.NEGATIVE_INFINITY	false	false	Passed
9	true	true	Passed
Double.POSITIVE_INFINITY	false	false	Passed