Program Testing

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We have tested our code on several samples considering broadly seven different scenarios. They are the following-

Base case: N = 1

Only one point is given and hence the area under it is zero.

Test input: test1.txt

Test output: 0.0

Expected: 0.0

Only two points: N=2 with x, y taking max values

Test input: test2.txt

Test output: 536821760.0

Expected: 536821761.0

Erroneous case: N<=0

Test input: test3.txt

Test output: "Input n must be greater than or equal to 1\nTerminating"

Expected: "Input n must be greater than or equal to 1\nTerminating"

Changing x, Constant y = max

Test input: test4.txt

Test output: 147447.0

Expected: 147447.0

Random: x > 0, y > 0 ∀ x, y ∈ Z

Test input: test5.txt

Test output: 13110656.0

Expected: 133110653.0

Random: x < 0, y < 0

Test input: test6.txt

Test output: -115597824.0

Expected: -115597821.5

Random: any x, y

Test input: test7.txt

Test output: 41386624.0

Expected: 41386625.0

The error in the output and expected output is precisely because of the precision of floating point which is precise only up to 23 bits. The correct values are stored in registers **s1** and **s2**.