**Assignment - 8**

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**(11811)**

**Ques -** Evaluate te2t dt by Gauss Quadrature Rule and compare the result for different values of N=3, 4, 5.

(Exact Value of integral is 5216.926477)

| **N** | **Output** | **Error** |
| --- | --- | --- |
| 3 | 4967.10668778 | 249.81978922 |
| 4 | 5197.54374633 | 19.38273067 |
| 5 | 5215.98763508 | 0.93884192 |
| 6 | 5216.89550038 | 0.03097662 |
| 7 | 5216.92573060 | 0.0007464 |
| 8 | 5216.92643877 | 0.00003823 |

As we increase N, the number of terms increases and therefore, error decreases. For N = 8, we get an answer in which the error order is approximately 4 \* 10-5