Lab 4

Differentiation and Integration

1. Write a program to calculate derivative from divided difference table
2. Write a program to calculate integration using Trapezoidal rule.
3. Write a program to calculate integration using composite Trapezoidal rule.
4. Write a program to calculate integration using Simpson's 1/3 rule.
5. Write a program to calculate integration using composite Simpson's 1/3 rule.
6. Write a program to evaluate integration of a function using Simpson's 3/8 rule.
7. Write a program to evaluate integration of a function using composite Simpson's 3/8 rule.
8. Write a program to evaluate integration of a function using Gauss integration algorithm.
9. Write a program to evaluate integration of a function using Romberg integration formula.
10. Write a program to evaluate double integration of a function using Trapezoidal rule.

Note: Lab report must contain algorithm, source code and output of each programming problem.