

### **Lab Assignment #3**

1. Write a program to calculate the derivative using forward difference formula.
2. Write a program to calculate the derivative using backward difference formula.
3. Write a program to calculate the derivative using central difference formula.
4. Write a program to calculate the derivative using forward divided difference formula.
5. Write a program to calculate the derivative using backward divided difference formula.
6. Write a program to implement trapezoidal rule.
7. Write a program to implement composite trapezoidal rule.
8. Write a program to implement Simpson's  $1/3$  rule .
9. Write a program to implement composite Simpson's  $1/3$  rule.
10. Write a program to implement Simpson's  $3/8$  rule.
11. Write a program to implement composite Simpson's  $3/8$  rule.

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