

*Differential Equation (D.E) .

- Order, degree, solution
- Ordinary differential equations

A. First order D. E

- 1- Variable separable
- 2- Homogenous
- 3- Linear
- 4- Exact

Applications

B. Second order D.E (linear with constant coefficients)

- 1- Homogenous
- 2- Non homogenous – solution: By undetermined coefficients.
: By variation of parameters.

C. Higher Order D. E

- Finding roots of an equation

Solution: By undermined coefficients

: By variation of parameters

*Laplace Transform

- Definition
- Properties

Laplace inverse

- Properties

The convolution

- Convolution the order

Solution of initial value problems using Laplace transform.