Given the ODE (constant coefficient):

The general solution of this equation is given by:

(General solution Complement solution + Particular solution)

The Characteristics Equation:

* Case 1: (Homogeneous)

In this case:

+ are distinct real roots:

+ are complex roots: ()

+ are double roots ()

* Case 2:

+

+

+

* Case 3:

+

+ (or) (Single root)

+ (double roots)

* Case 4:

+

+