

Q1. Verify that  $y = c_1 \cosh x + c_2 \sinh x + 2e^{2x}$  is a general solution of  $y'' - y = 6e^{2x}$ .

Q2. Verify that  $y_p = x^2 + 3x$  is a particular solution of  $y'' - 6y' + 5y = 5x^2 + 3x - 16$ .

Q3. Use reduction of order method to solve  $y'' + 9y = 0$  with  $y_1 = \sin 3x$