Abstract

The boundary value problems for the 2nd order non-linear ordinary differential equations are solved with four numerical methods. These numerical methods are Rung-Kutta of 4th order, Rung–Kutta Butcher of 6th order, differential transformation method, and the Homotopy perturbation method. Three physical problems from the literature are solved by the four methods for comparing results. Results were presented in tables and figures. The differential transformation method appeared to be effective and reliable to finding the semi numerical-analytical solutions for such type of boundary value problems.