

Abstract.

The main aim of this project is to solve the non-linear ordinary differential equation . We are apply the iterative method are called variational method (VIM) . Some examples will be solved to show that the proposed methods are efficient and have high accuracy and does not require any restrictive assumptions. Also, the comparison with the numerical method, such Runga Kuta method (RKM) ,will be presented to demonstrate the effectiveness of the presented method. The first chapter of this project will be focus of on some basic concepts of the ordinary differential equations. The second chapter deals with the implementation of the new iterative method (VIM) to solve the non-linear ordinary differential equation. In chapter three , we will solve some examples , in the first ,well be find the exact solution then use the (RKM)and (VIM) to find the numerical solution. Finally presented the absolute error between VIM, RKM, and present conclusions.