ENGR 326
Lab Assignment - Introduction to Runge Kutta Methods

To familiarize yourself with the general approach of Runge Kutta methods for solving initial value ODEs, solve the following ODE problem for 30 timesteps using a forth-order Runge Kutta algorithm by "by hand" (suggest using a spreadsheet as your computational tool).

$$\frac{dy}{dt} = -ky \; ; \quad y(t=0) = y_0$$

Set up the algorithm so that you can vary the stepsize and the coefficient k. Compare your numerical solution to the exact solution for a range of stepsizes and values of the coefficient k. Turn in the solution for $y_0 = 30$, $h = 0.5$ and $k = 0.3$.