

## **Mathematics for Engineering II**

## Act 10: Numerical methods for ODE: Runge-Kutta

Make a report where you solve the following exercises of ODE by Runge-Kutta.

The report must contain Excel with cover and the exercises.

1.- 
$$y' = 2x - 3y + 1$$
,  $y(1) = 5$ , h=0.1

2. 
$$y' = y^2 + 1$$
,  $y(0) = 0$  h=0.2

3. 
$$y' - x^2 - y^2 = 0$$
,  $y(0) = 1$  h=0.15

4. 
$$y' = (x - y)^2$$
,  $y(0) = 0.5 \text{ h=0.1}$ 

5.- 
$$y' = xy + \sqrt{y}$$
,  $y(0) = 1$  h=0.1