Q8 Use Runge-Kutta Method to find the value of y when x=0.5, given that y=1, when x=0 and that y'=(y-x)/(y+x).

Answer :

Using 1st order R-K method : $k = h*y'(x_n,y_n)$ & $y_{n+1} = y_n + k$

We get :

n	X	Y
1	0.100000	1.100000
2	0.200000	1.200000
3	0.300000	1.300000
4	0.400000	1.400000
5	0.500000	1.500000

Hence at x= 0.500000 , **y= 1.500000**.