



SNS COLLEGE OF ENGINEERING

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AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Topic: 5.12 – Tutorial 15

1. If $\frac{dy}{dx} = \frac{y^2 - x^2}{y^2 + x^2}$, $y(0) = 1$, find $y(0.2)$, $y(0.4)$ by Runge - Kutta method of fourth order
2. Using R.K method of fourth order find $y(0.2)$ and $y(0.4)$ and $y(0.6)$ for the initial value problem $\frac{dy}{dx} = y - x^2$, $y(0) = 1$
3. Given $\frac{dy}{dx} = \frac{1}{2}(1 + x^2)y^2$ and $y(0)=1$, $y(0.1)=1.06$, $y(0.2)=1.12$, $y(0.3)=1.21$ evaluate $y(0.4)$ and $y(0.5)$ by Milnes's predictor- corrector method.
4. Given and $\frac{dy}{dx} = y - x^2$ $y(0)=1$, $y(0.2)=1.12186$, $y(0.4)=1.46820$, $y(0.6)=1.7379$ evaluate $y(0.8)$ by Milnes's predictor- corrector method.