

Due date : 2nd November, 2020.

1. Solve by Gauss-Seidal method:

$$8x - 3y + 2z = 20$$

$$4x + 11y - z = 33$$

$$6x + 3y + 12z = 35$$

2. Using Lagrange's interpolation formula find $y(10)$ from the following table:

x	5	6	9	11
y	12	13	14	16

3. Evaluate $\int_0^1 \int_0^1 \frac{1}{1+x+y} dx dy$ by Trapezoidal rule.4. Using Runge-Kutta method, find $y(0.2)$ for

$$\frac{dy}{dx} = \frac{y-x}{y+x}, \quad y(0) = 1. \quad \text{Take } h = 0.2.$$

5. Given $\frac{dy}{dx} = \frac{xy}{2}$, $y(0) = 1$, $y(0.1) = 1.01$,
 $y(0.2) = 1.022$, $y(0.3) = 1.023$ find $y(0.4)$
using Adam's method.