KOLHAPUR INSTITUTE OF TECHNOLOGY'S,
COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

Tutorial No-1

Title: Advanced linear algebra.

Course Name: Computational Mathematics **Class: S.Y.B.Tech (CSE- B)**

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Q 1) Apply the Gauss Jordon method to solve the following equations.

a) $3x + y - z = 4;\ -2x + 3y - 4z = -1;\ x - y + 2z = 2.\ (Ans: x = 1, y = 3, z = 2)$

b) $3x + 2y - 2z = 4;\ x - 2y + 3z = 6;\ 2x + 3y + 4z = 15.$ Ans : $x = 2, y = 1$ & $z = 2.$

c) $x + y + z = 4, 4x + 3y - z = 12, 3x + 5y + 3z = 15$ Ans:- $x = 2, y = 1.5, z = 0.5$

d) $10x + y + z = 12;\ x + 10y + z = 12;\ x + y + 10z = 12.\ (Ans: x = 1, y = 1, z = 1)$

Q 2) Solve the following equations by factorization method .

a) $3x_1 + 5x_2 + 2x_3 = 8; 8x_2 + 2x_3 = -7;\ 6x_1 + 2x_2 + 8x_3 = 26;$

$Ans: x_1 = 4, x_2 = -1, x_3 = \frac{1}{2}$

b) $x + 2y + 3z = 14, 2x + 3y + 4z = 20, 3x + 4y + z = 14$ Ans:- $x = 1, y = 2, z = 3$

c) $2x + y + z = 10; 3x + 2y + 3z = 18; x + 4y + 9z = 16;$

$(Ans: x = 7, y = -9, z = 5)$

d) $10x + y + z = 12;\ 2x + 10y + z = 13;\ x + y + 5z = 7;$

$(Ans: x = 1, y = 1, z = 1)$