Class – 12th **Chapter-5** **Subject Maths**

Worksheet-23 Inverse of a Matrix and Linear Equations

1. Solve the following system of equations using Cramer's rule.

(i) $2x+3y=9$ (ii) $2x-7y-13=0$

$3x-2y=7$ $5x+6y-9=0$

2. Prove that the following system of equations are incosnstent:

(i) $3x+y+2z=3$ (ii) $x+6y+11=0$

$2x+y+3z=5$ $3x+20y-6z+3=0$

$x-2y-z=1$ $6y-18z+1=0$

3. Solve the equations using Cramer's rule:

(i) $x+2y+4z=16$ (ii) $2x+y-z=0$

$4x+3y-2z=5$ $x-y+z=6$

$3x-5y+z=4$ $x+2y+z=3$

4. Solve the equations using determinants :

$$\frac{2}{x}+\frac{3}{y}+\frac{10}{z}=4$$

$$\frac{4}{x}-\frac{6}{y}+\frac{5}{z}=1$$

$$\frac{6}{x}+\frac{9}{y}-\frac{20}{z}=2$$

5. Solve the equations using matrix method:

(i) $x+y-z=1$ (ii) $6x-12y+25z=4$

$3x+y-2z=3$ $4x+15y-20z=3$

$x-y-z=-1$ $2x+18y+15z=10$