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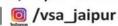


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Class - 12th

Chapter-5

Subject Maths

Worksheet-21

Inverse of a Matrix and Linear Equations

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

$$x + y + z = 9$$

$$2x + 5y + 7z = 52$$

$$2x + y - z = 0$$

2. Solve the system of equation using matrix inverse method.

$$5x - 3y = 2$$

$$x + 2y = 3$$

3. Solve the following system of equations in matrix form and find A⁻¹.

$$2x - y + 3z = 9$$

$$x + y + z = 6$$

$$x-y+z=2$$
.

4. If
$$A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$$
 and $B = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$ then find AB and solve the following equations

$$x-y=3$$
; $2x+3y+4z=17$, $y+2z=7$.

5. Solve the following system of equations

$$\begin{bmatrix} 3 & 0 & 3 \\ 2 & 1 & 0 \\ 4 & 0 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 8 \\ 1 \\ 4 \end{bmatrix} + \begin{bmatrix} 2y \\ z \\ 3y \end{bmatrix}$$

6. Solve the equations using determinants : 6x + y - 3z = 5

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

$$2x + y + 4z = 8$$