

National Institute of Open Schooling
Senior Secondary Course : Mathematics
Lesson 20 : Matrices
Worksheet – 20

1. Write simultaneously linear equations in three variables and express it in the matrix form.
2. Cite an example of 2×3 and 3×2 matrix. Observe the number of elements in each of the matrix.
3. In a class-X there are three sections A, B and C. In section-A, there are 45 boys and 34 girls; in section-B, there are 40 boys and 38 girls; and in section-C, there are 42 boys and 35 girls. Express this information in tabular form in two different ways and also in the matrix form.
4. Differentiate between Diagonal Matrix and Square matrix. Give any two examples of Diagonal Matrix and Square matrix with a different order.

5. If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, then find the value of $A^2 - 5A + 4I_3$

6. Using elementary transformations, find the inverse of the matrix

$$A = \begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix}$$

7. Identify the condition of two matrices when they are to be added to each other. Take two matrices and add to each other and check whether $A + B = B + A$

8. If $A = \begin{bmatrix} 2 & -3 \\ 3 & 4 \end{bmatrix}$, then show that: $A^2 - 6A + 17I = O$. Hence find A^{-1} .

9. Identify the condition of two matrices which are to be multiplied to each other. Take any two matrices and multiply them to each other and check whether $A \times B = B \times A$

10. Write any one 2×2 square matrix and find its inverse of matrix by using elementary column operations.