INDIAN SCHOOL NIZWA - WORKSHEET

MATHEMATICS

CH-4. Determinants-Practice Questions

Name_____ Date:12-04-24 Class: XII Sec: A

1.	Evaluate $\begin{vmatrix} a+bi & c+di \\ -c+di & a-bi \end{vmatrix}$
2.	Evaluate $\begin{vmatrix} \sin 30° & \cos 30° \\ -\sin 60° & \cos 60° \end{vmatrix}$
3.	If A is a non- singular matrix of order 3 x 3 and | adjA| = $\|A\|^K$, then write the value of K
4.	If A is a square matrix of order 3 x 3 and | 3A| =k$\|A\|$, then write the value of K
5.	If $\begin{vmatrix} x+1 & x-1 \\ x-3 & x+2 \end{vmatrix} = \begin{vmatrix} 4 & -1 \\ 1 & 3 \end{vmatrix}$ find x
6.	If A_{ij} is the co-factor of the element a_{ij} of the determinant $\begin{bmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{bmatrix}$, then write the value of $a_{32}A_{32}$
7.	Using the determinants, show that the three points $A(2,4), B(0,1), C(4,7)$ are collinear.
8.	Using determinants, find the value of k when the three points $A(5,1), B(k,1)$ and $C(11,4)$ are collinear.
9.	Using determinants, find the value of x, if the area of the triangle ABC is 35 sq. units with vertices $A(x,4), B(2,-6)$ and $C(5,4)$. Use determinant method.
10.	Find the equation of the line joining the points A(1,3) and B(0,0) using determinants and find the value of k if D(k,0) is a point such that the area of the triangle ABD is 3 sq. units.
11.	If matrix A=$\begin{bmatrix} 2 & 5 & 1 \\ -1 & 2 & 4 \\ 4 & 3 & 5 \end{bmatrix}$ verify A(adjA)=(adjA.A)=$\|A\| I$
12.	A square matrix A=$\begin{bmatrix} 2 & 3 & 1 \\ 1 & 4 & 5 \\ -1 & 2 & 3 \end{bmatrix}$ find A^{-1} and show that $A.A^{-1} = I$.
13.	If A and B are invertible matrices of same order , then prove that $(AB)^{-1} = B^{-1}A^{-1}$.
14.	If A=$\begin{bmatrix} 5 & 0 & 4 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ and $B^{-1} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$, then find $(AB)^{-1}$.

15.	Using matrix method examine the consistency of the following system of equations i) $2x + 3y = 10, \quad 7x - 4y = 6$ ii) $x + y - 2z = 1, \quad 2x + 3y - 5z = 3, \quad 3x - 4y + z = -4$
16.	If A=$\begin{bmatrix} 1 & 1 & 1 \\ 1 & 0 & 2 \\ 3 & 1 & 1 \end{bmatrix}$, find A^{-1} and use A^{-1} to solve the following system of equations: $x + y + z = 6$ $x + 2z = 7$ $3x + y + z = 12$