INDIAN SCHOOL NIZWA - WORKSHEET

MATHEMATICS
CH- 4-DETERMINANTS

Name: _____ Date:_____ Class: XII Sec: ___

1.A is a square matrix of order 3 such that |A|= λ, then write the value of |-A|.

2.find the value of x for which the following matrix is singular.

$$\begin{bmatrix} 5-x & x+1 \\ 2 & 4 \end{bmatrix}$$

3.If Aij is the cofactor of the element aij of the determinant $\begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$, then write the value of a32.A32.

4.Using properties of determinants, prove the following:

$$\begin{vmatrix} x & y & z \\ x^2 & y^2 & z^2 \\ y+z & z+x & x+y \end{vmatrix} = (x-y)(y-z)(z-x)(x+y+z)$$

5.By using properties of determinants, prove the following:

$$\begin{vmatrix} 1+x^2-y^2 & 2xy & -2y \\ 2xy & 1-x^2+y^2 & 2x \\ 2y & -2x & 1-x^2-y^2 \end{vmatrix} = (1+x^2+y^2)^3$$

6.Using properties of determinants, prove that

$$\begin{vmatrix} a^2+1 & ab & ac \\ ab & b^2+1 & bc \\ ca & cb & c^2+1 \end{vmatrix} = 1+a^2+b^2+c^2$$

7.solve the system of equations by matrix method.
x-y+2z = 1, 2y – 3z = 1 and 3x – 2y + 4z = 2

8.The management committee of a residential colony decided to award some of its members for honesty, some for helping others and some for supervising the workers to keep the colony neat and clean. The sum of all the awardees is 12. Three times the sum of awardees for cooperation and supervision added to two times the number of awardees for honesty is 33. If the sum of the number of awardees for honesty and supervision is twice the number of awardees for helping others. Using matrix method, find the number of awardees of each category.