# VIDYA SHREE ACADEMY SR. SEC. SCHOOL <br> An English Medium Co.Ed. School \| Science \& Commerce 

## Little Steps <br> Are Primary wing of VSA <br> W : www.vsajaipur.com | E:vsajaipur@gmail.com M. : +91 9460356652,8058999828 Add. : 84, Krishna Vihar, Behind Narayan Niwas, Gopalpura Bypass, Jaipur - 302015 /vsajaipur \| /vsajaipur \| /

Class $\mathbf{- 1 2}^{\text {th }}$
Worksheet-25

Chapter-5

## Subject Maths

Inverse of a Matrix and Linear Equations

1. If $A=\left[\begin{array}{lll}1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1\end{array}\right]$ then prove that $A^{2}-4 A-5 I=0$ and using this find $A^{-1}$.
2. Solve the following system of equations using the matrix method.
(i) $5 x-7 y=2$
$7 x-5 y=3$
(ii) $3 x+y+z=3$
$2 x-y-z=2$
$-x-y+z=1$
(iii) $x+2 y-2 z+5=0$
$-x+3 y+4=0$
$-2 y+z-4=0$
3. Find the area triangle ABC for the vertices given below:
(i) $A(-3,5), B(3,-6), C(7,2)$
(ii) $A(2,7) \quad B(2,2) \quad C(10,8)$
4. If the points $(2,-3),(\lambda,-2)$ and $(0,5)$ are collinear then find the vlaue of $\lambda$.

Find the matrix A where

$$
\left[\begin{array}{ll}
1 & 2 \\
2 & 3
\end{array}\right] A\left[\begin{array}{ll}
4 & 7 \\
3 & 5
\end{array}\right]=\left[\begin{array}{ll}
1 & 0 \\
0 & 1
\end{array}\right]
$$

5. If $A=\left[\begin{array}{ccc}1 & 1 & 1 \\ 1 & 2 & -3 \\ 2 & -1 & 3\end{array}\right]$ then find $A^{-1}$ and using this solve the equations:

$$
x+y+2 z=0, \quad x+2 y-z=9, \quad x-3 y+3 z=-14
$$

6. If $A=\left[\begin{array}{cc}a & b \\ c & \frac{1+b c}{a}\end{array}\right]$ then find $A^{-1}$ and solve that $a A^{-1}=\left(a^{2}+b c+1\right) I-a A$.
