**JESUS AND MARY SCHOOL AND COLLEGE**

**CLASS-12 ( MATHS )**

**CHAPTER NAME – DETERMINANTS**

**WORKSHEET -1**

**Q.1.** Evaluate the following determinants:

 (a) $\left|\begin{matrix}3&5\\1&2\end{matrix}\right|$ (b) $\left|\begin{matrix}x+2&2x+5\\3x-1&x-3\end{matrix}\right|$

**Q.2.** Find the value of x. If $\left|\begin{matrix}x-1&x-2\\x&x-3\end{matrix}\right|=0$.

**Q.3.** Find the minors and cofactors of elements of determinant $\left|\begin{matrix}5&20\\0&-1\end{matrix}\right|$

**Q.4.** Write down the minors of $-2$ and$ 4$ in $\left|\begin{matrix}2& 1& 1\\1&-2&-3\\3& 2& 4\end{matrix}\right|$.

**Q.5.** Write down the cofactors of 3 and -2 of the determinant $\left|\begin{matrix}1& 0&-2\\3&-1& 2\\4& 5& 6\end{matrix}\right|$.

**Q.6.** Evaluate the following determinants:

 (a) $\left|\begin{matrix} 5&1& 0\\ 2&3&-1\\-3&2& 0\end{matrix}\right|$ (b) $\left|\begin{matrix}1&3&5\\2&6&10\\31&11&38\end{matrix}\right|$

**Q.7.** Show that $\left|\begin{matrix} 1&a&b\\-a&1&c\\-b&-c&1\end{matrix}\right|=1+a^{2}+b^{2}+c^{2}$ .

**Q.8.** If one root of $\left|\begin{matrix}7&6&x\\2&x&2\\x&3&7\end{matrix}\right|=0$ is $x=-9$, find the other roots.

**Q.9.** Express the value of the determinant $\left|\begin{matrix}-2& 4& 2\\ 1& 5&-3\\ 5&-2& 2\end{matrix}\right|$ in terms of the minors of the third row.

**Q.10.** Find the area of the triangle whose vertices are: $\left(-8,-2\right),\left(-4,-6\right)and \left(-1,5\right)$.

**Q.11.** Find x so that the points, $\left(3,-2\right),\left(x,2\right) and \left(8, 8\right) $ be on a line.

**Q.12.** If $\left(x,y\right),\left(a,0\right),\left(0,b\right)$ are collinear, then using determinants prove that $\frac{x}{a}+\frac{y}{b}=1.$

**Note**- **Please do this assignment in your old copies. It will be checked when the school re-opens.**

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