

Class – 12th

Chapter-4

Subject Maths

Worksheet-13

Determinant

1. If $\begin{vmatrix} x & y \\ 2 & 4 \end{vmatrix} = 0$ then find the ratio $x : y$

2. If $\begin{vmatrix} 2 & 3 \\ y & x \end{vmatrix} = 4$ and $\begin{vmatrix} x & y \\ 4 & 2 \end{vmatrix} = 7$ then evaluate x and y .

3. If $\begin{vmatrix} x-1 & x-2 \\ x & x-3 \end{vmatrix} = 0$ then find the value of x .

4. Evaluate the determinant and also find the minors and cofactors of elements of first row

(i) $\begin{vmatrix} 1 & -3 & 2 \\ 4 & -1 & 2 \\ 3 & 5 & 2 \end{vmatrix}$

(ii) $\begin{vmatrix} a & h & g \\ h & b & f \\ g & f & c \end{vmatrix}$

5. Prove that $\begin{vmatrix} 1 & a & b \\ -a & 1 & c \\ -b & -c & 1 \end{vmatrix} = 1 + a^2 + b^2 + c^2$.

6. Evaluate the determinant $\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$ without expansion.

7. Evaluate the determinant $\begin{vmatrix} a-b & m-n & x-y \\ b-c & n-p & y-z \\ c-a & p-m & z-x \end{vmatrix}$ without expansion.