



Key Takeaways



Properties of Determinants

- If each element of any row (or column) can be expressed as sum of two terms , then the determinant can also be expressed as sum of two determinants .

$$\Delta = \begin{vmatrix} a+x & b+y & c+z \\ d & e & f \\ g & h & i \end{vmatrix} = \begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix} + \begin{vmatrix} x & y & z \\ d & e & f \\ g & h & i \end{vmatrix}$$

Proof:

$$\Delta = (a+x)M_{11} - (b+y)M_{12} + (c+z)M_{13}$$

$$= aM_{11} - bM_{12} + cM_{13} + xM_{11} - yM_{12} + zM_{13}$$