

Determinant of a 2 by 2 matrix: $|A| = \begin{vmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{vmatrix} = a_{11}a_{22} - a_{21}a_{12}$

Find the determinant:

$$A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$$

$$B = \begin{bmatrix} 4 & 2 \\ 2 & 6 \end{bmatrix}$$

The minor M_{ij} of the element a_{ij} of a square matrix A of order $n \geq 3$ is the determinant of the matrix of order $n-1$ obtained by deleting the corresponding row and column.

The cofactor C_{ij} of the element a_{ij} of a square matrix A of order $n \geq 3$ is given by $C_{ij} = (-1)^{i+j} M_{ij}$

$$B = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 3 & -1 \\ 3 & 6 & -2 \end{bmatrix}$$

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