

### Definition of the Determinant of a $2 \times 2$ Matrix

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The **determinant** of the matrix

$$A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$$

is  $\det(A) = |A| = a_{11}a_{22} - a_{21}a_{12}$