Determinants of 2×2 Matrices

Name _____

Date _____ Period _____

Every square matrix can be assigned a specific value known as its determinant.

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

The determinant of a 2×2 matrix is the difference of the products of the diagonals.

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$$\det\begin{bmatrix} a & b \\ c & d \end{bmatrix} = \begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - cb$$

The determinant of a 2×2 matrix is the difference of the products of the diagonals.

Calculate the determinants of the following matrices.

$$\det \begin{bmatrix} 4 & 2 \\ 3 & 1 \end{bmatrix} \qquad \det \begin{bmatrix} -4 & 4 \\ 8 & -10 \end{bmatrix}$$

$$\begin{vmatrix} 4 & 2 \\ 3 & 1 \end{vmatrix} \qquad \begin{vmatrix} -4 & 4 \\ 8 & -10 \end{vmatrix}$$

Calculate the determinants of the following matrices.

$$\det \begin{bmatrix} 6 & 1 \\ 2 & -4 \end{bmatrix} \qquad \det \begin{bmatrix} -5 & -3 \\ 3 & 0 \end{bmatrix}$$

$$\begin{vmatrix} 6 & 1 \\ 2 & -4 \end{vmatrix} \qquad \begin{vmatrix} -5 & -3 \\ 3 & 0 \end{vmatrix}$$

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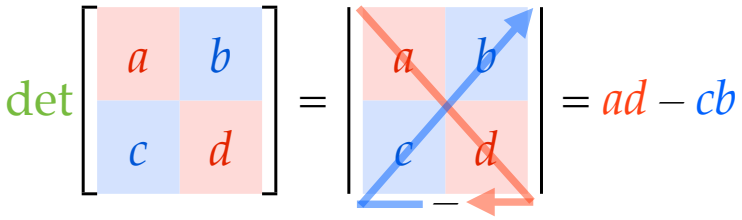

The determinant of a 2×2 matrix is the difference of the products of the diagonals.