

EQ:

❖ Definition of Determinant of a 2×2 Matrix: Given $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

I. notation for the determinant or

(notice - no _____ at the top or bottom!)

II. formula for the determinant

Ex. 1 Find the determinant for each matrix.

a) $S = \begin{bmatrix} -3 & 4 \\ -2 & 9 \end{bmatrix}$

b) $T = \begin{bmatrix} -6 & 12 \\ -2 & 4 \end{bmatrix}$

Ex. 2 Find the determinant for these matrices.

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

b) $B = \begin{bmatrix} 0 & \frac{3}{2} \\ 2 & 4 \end{bmatrix}$

❖ Finding the Determinant of a 3 x 3 Matrix: Given $A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$

$$\det(A) =$$

Ex. 3 Find the determinant of the given matrix.

$$\begin{bmatrix} 1 & 0 & -4 \\ -2 & 1 & 8 \\ -1.5 & 6 & 11 \end{bmatrix}$$

Ex. 4 Find the determinant of the given matrix.

$$\begin{bmatrix} 3 & 1 & 8 \\ 6 & 3 & 0 \\ 6 & 8 & 8 \end{bmatrix}$$

Ex. 5 Find the determinant of the given matrix.

$$A = \begin{bmatrix} 0 & 2 & 1 \\ 3 & -1 & 2 \\ 4 & 0 & 1 \end{bmatrix}$$

❖ In Class Practice: Find the determinant of each matrix.

1. $A = \begin{bmatrix} 2 & -6 \\ 1 & -2 \end{bmatrix}$

2. $B = \begin{bmatrix} 2 & -1 & 3 \\ 4 & 0 & 1 \\ 2 & 0 & 3 \end{bmatrix}$

3. $C = \begin{bmatrix} 3 & 1 & -6 \\ -5 & 2 & 10 \\ 4 & 2 & -8 \end{bmatrix}$