COMPETENCIA: MATRICES y SISTEMA DE ECUACIONES, APLICANDO MATRICES

Nombre:_____ **Matricula**_____

15. RESUELVE LA DETERMINANTE DE LAS SIGUIENTES MATRICES 2 X 2.

$\mathbf{1)}\quad \boldsymbol{E} = \begin{pmatrix} \mathbf{4} & \mathbf{2} \\ \mathbf{5} & \mathbf{-3} \end{pmatrix} \quad \boldsymbol{det}\ (\boldsymbol{E})\ \boldsymbol{o}|\ \boldsymbol{E}|$

$\boldsymbol{det}\ (\boldsymbol{E})\boldsymbol{o}|\ \boldsymbol{E}| = [(\quad)(\quad)] - [(\quad)(\quad)] =$

$\boldsymbol{det}\ (\boldsymbol{E})\boldsymbol{o}\ |\boldsymbol{E}| = [(\quad)] - [(\quad)] =$ $\qquad \boldsymbol{det}\ (\boldsymbol{E})\boldsymbol{o}\ |\boldsymbol{E}| =$ _____

Proverbios 22: 28 No cambies de lugar los linderos establecidos por tus antepasados.

$\mathbf{2)}\ \boldsymbol{J} = \begin{pmatrix} \mathbf{-5} & \mathbf{4} \\ \mathbf{-3} & \mathbf{2} \end{pmatrix} \quad \boldsymbol{det}\ (\boldsymbol{J})\ \boldsymbol{o}|\ \boldsymbol{J}|$

$\boldsymbol{det}\ (\boldsymbol{J})\boldsymbol{o}|\ \boldsymbol{J}| = [(\quad)(\quad)] - [(\quad)(\quad)] = \ [(\quad)] - [(\quad)] =$ $\quad \boldsymbol{det}\ (\boldsymbol{J})\boldsymbol{o}\ |\boldsymbol{J}| =$ _____

$\mathbf{3)}\ \boldsymbol{F} = \begin{pmatrix} \mathbf{1} & \mathbf{-2} \\ \mathbf{4} & \mathbf{-5} \end{pmatrix}$

$\boldsymbol{det}\ (\boldsymbol{F})\ \mathbf{o}\ |\boldsymbol{F}| = [(\quad)(\quad)] - [(\quad)(\quad)] = \ [(\quad)] - [(\quad)] =$ $\quad \boldsymbol{det}\ (\boldsymbol{F})\boldsymbol{o}\ |\boldsymbol{F}| =$ _____

16. RESUELVE LAS DETERMINANTES DE LAS SIGUIENTES MATRICES 3 X 3 POR DOS MÉTODOS CONOCIDOS.

Nota: Agregando dos columnas a la matriz original

$\mathbf{1)}\ \boldsymbol{I} = \begin{pmatrix} \mathbf{-3} & \mathbf{5} & \mathbf{0} \\ \mathbf{5} & \mathbf{-3} & \mathbf{4} \\ \mathbf{-1} & \mathbf{-2} & \mathbf{-2} \end{pmatrix} \quad \mathbf{det}(\boldsymbol{I})\ \boldsymbol{o}|\ \boldsymbol{I}| \qquad \boldsymbol{I} = \begin{pmatrix} \mathbf{-3} & \mathbf{5} & \mathbf{0} \\ \mathbf{5} & \mathbf{-3} & \mathbf{4} \\ \mathbf{-1} & \mathbf{-2} & \mathbf{-2} \end{pmatrix}\begin{pmatrix} \mathbf{-3} & \mathbf{5} \\ \mathbf{5} & \mathbf{-3} \\ \mathbf{-1} & \mathbf{-2} \end{pmatrix}$

$[\boldsymbol{I}] = [(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)] -$
$[(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)]$

$[\boldsymbol{I}] = [(\quad) + (\quad) + (\quad)] - [(\quad) + (\quad) + (\quad)]$

$[\boldsymbol{I}] = [(\quad)] - [(\quad)] =$ $\qquad$ $\boldsymbol{det\ (I) o\ |I|} = \_\_\_\_$

Nota: Agregando dos filas a la matriz original

$$2)\ \boldsymbol{I} = \begin{pmatrix} -3 & 5 & 0 \\ 5 & -3 & 4 \\ -1 & -2 & -2 \end{pmatrix} \qquad \mathbf{det}(\boldsymbol{I})\ \boldsymbol{o}|\ \boldsymbol{I}|$$

$$\boldsymbol{I} = \begin{pmatrix} -3 & 5 & 0 \\ 5 & -3 & 4 \\ -1 & -2 & -2 \end{pmatrix}$$

$$\begin{pmatrix} -3 & 5 & 0 \\ 5 & -3 & 4 \end{pmatrix}$$

$\mathrm{I} = [(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)] -$
$[(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)]$

$\mathrm{I} = [(\quad) + (\quad) + (\quad)] - [(\quad) + (\quad) + (\quad)]$ $\qquad$ $\mathrm{I} = [(\quad)] - [(\quad)] =$

Sólo hay una persona que puede decidir lo que voy a hacer, y soy yo mismo (Orson Welles)
Nota: Agregando dos columnas a la matriz original

Nota: Por el método preferido.

$$\boldsymbol{B} = \begin{pmatrix} 2 & 3 & 2 \\ 0 & -4 & -1 \\ 5 & 1 & -3 \end{pmatrix} \qquad \mathbf{det(B)\ o|\ B|}$$

$[\boldsymbol{B}] = [(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)] -$
$[(\quad)(\quad)(\quad) + (\quad)(\quad)(\quad) + (\quad)(\quad)(\quad)] =$

$[\boldsymbol{B}] = [(\quad) + (\quad) + (\quad)] - [(\quad) + (\quad) + (\quad)] =$

$[\boldsymbol{B}] = [(\quad)] - [(\quad)] =$ $\qquad$ $\boldsymbol{det\ (B) o\ |B|} = \_\_\_\_$

17. DETERMINA LA INVERSA DE LA MATRIZ 2 X 2 POR FÓRMULA.

Nota: Comprueba la matriz de identidad.

$$1)\ \boldsymbol{K} = \begin{pmatrix} -3 & -4 \\ 5 & 6 \end{pmatrix} \quad \boldsymbol{K^{-1}} \qquad \boldsymbol{K^{-1}} = \frac{1}{\boldsymbol{det\ K}} \begin{pmatrix} \boldsymbol{a_{2,2}} & \boldsymbol{-a_{1,2}} \\ \boldsymbol{-a_{2,1}} & \boldsymbol{a_{1,1}} \end{pmatrix}$$

$$\boldsymbol{K^{-1}} = \frac{\mathbf{1}}{\boldsymbol{det\ K}} \begin{pmatrix} \_\_\_\_ & \_\_\_\_ \\ \_\_\_\_ & \_\_\_\_ \end{pmatrix}$$

Proverbio 22: 28 No traspases los linderos antiguos Que pusieron tus padres.