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Nombre del tema: Matrices algebraicas

Parcial: 1

Nombre de la Materia: Matemáticas Administrativas

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Nombre de la Licenciatura: Contabilidad y Finanzas

Cuatrimestre: 2

## Actividad de la plataforma

$$\text{Matriz } A = \begin{bmatrix} 3 & 2 & 5 \\ 4 & -1 & -3 \\ 2 & 1 & 8 \end{bmatrix} \quad \text{Matriz } B = \begin{bmatrix} 1 & 2 & 3 \\ 5 & 2 & -1 \\ -1 & 1 & 1 \end{bmatrix}$$

a)  $A + B$

$$\begin{bmatrix} 3 & 2 & 5 \\ 4 & -1 & -3 \\ 2 & 1 & 8 \end{bmatrix} + \begin{bmatrix} 1 & 2 & 3 \\ 5 & 2 & -1 \\ -1 & 1 & 1 \end{bmatrix} = \begin{bmatrix} 4 & 4 & 8 \\ 9 & -1 & -4 \\ -1 & 2 & 9 \end{bmatrix}$$

b)  $3A$

$$3 \begin{bmatrix} 3 & 2 & 5 \\ 4 & -1 & -3 \\ 2 & 1 & 8 \end{bmatrix} = \begin{bmatrix} 9 & 6 & 15 \\ 12 & -3 & -9 \\ 6 & 3 & 24 \end{bmatrix}$$

c)  $3A - B$

$$3A \begin{bmatrix} 9 & 6 & 15 \\ 12 & -3 & -9 \\ 6 & 3 & 24 \end{bmatrix} - B \begin{bmatrix} 1 & 2 & 3 \\ 5 & 2 & -1 \\ -1 & 1 & 1 \end{bmatrix} = \begin{bmatrix} 8 & 4 & 12 \\ 7 & -1 & -8 \\ 7 & 2 & 23 \end{bmatrix}$$

d)  $A \times B$

$$A = \begin{bmatrix} 3 & 2 & 5 \\ 4 & -1 & -3 \\ 2 & 1 & 8 \end{bmatrix} \quad B = \begin{bmatrix} 1 & 2 & 3 \\ 5 & 2 & -1 \\ 1 & 1 & 1 \end{bmatrix} = \begin{bmatrix} 18 & 15 & 12 \\ -4 & 3 & 10 \\ 15 & 14 & 13 \end{bmatrix}$$

$$* \quad 3(1) + 2(5) + 5(1) = \quad * \quad 4(1) + (-1)(5) + (-3)(1)$$
$$3 + 10 + 5 = 18 \quad 4 + (-5) + (-3)$$

$$* \quad 3(2) + 2(2) + 5(1) = \quad 4 - 5 - 3 =$$
$$6 + 4 + 5 = 15 \quad 4 - 8 = -4$$

$$* \quad 3(3) + 2(-1) + 5(1) = \quad * \quad 4(2) + (-1)(2) + (-3)(1)$$
$$9 + (-2) + 5 = \quad 8 + (-2) + (-3)$$
$$9 - 2 + 5 = \quad 8 - 2 - 3$$
$$14 - 2 = 12 \quad 8 - 5 = 3$$

$$* \quad 2(1) + 1(5) + 8(1)$$
$$2 + 5 + 8 = 15$$

$$* \quad 2(2) + 1(2) + 8(1) =$$
$$4 + 2 + 8 = 14$$

$$* \quad 2(3) + 1(-1) + 8(1) =$$
$$6 + (-1) + 8 =$$
$$6 - 1 + 8 =$$
$$14 - 1 = 13$$

$$* \quad 4(3) + (-1)(-1) + (-3)(1)$$
$$12 + 1 + (-3)$$
$$12 + 1 - 3$$
$$13 - 3 = 10$$

c) |A|

$$A \begin{vmatrix} 3 & 2 & 5 \\ 4 & -1 & -3 \\ 2 & 1 & 8 \\ 3 & 2 & 5 \\ 4 & -1 & -3 \end{vmatrix}$$

$$3 \times 4 = -3 \times 8 = -24$$

$$4 \times 1 = 4 \times 5 = 20$$

$$2 \times 2 = 4 \times -3 = -12$$

$$5 \times -1 = -5 \times 2 = -10$$

$$-3 \times 1 = -3 \times 3 = -9$$

$$8 \times 2 = 16 \times 4 = 64$$

$$-24 + 20 - 12 - (-10 - 9 + 64)$$

$$-24 + 20 - 12 + 10 + 9 - 64 = \boxed{-61}$$