

Unidad 3.- LENGUAJE ALGEBRAICO (I)

Nota: _____

1. Realiza las siguientes operaciones, indicando en cada paso las propiedades utilizadas:

$$-2nm + 5n - 7m + 3mn - 4m + n =$$

$$\begin{aligned} &= (-7 - \boxed{})m + (\boxed{} + 5)n + (\boxed{} + 3)mn = \\ \text{a) } &= \boxed{}m + \boxed{}n + \boxed{}mn \end{aligned}$$

Asociativa +

Asociativa ·

Distributiva

Factor común

Prod. Pots. = base

Coc. Pots. = base

Pot. de prod.

Pot. de pot.

$$\left(\frac{-21}{18}nm^3\right) \cdot \left(\frac{30}{42}m^2n^4\right) =$$

$$\begin{aligned} &\text{fracción} \\ &= \frac{\boxed{}}{\boxed{}} \cdot (m^3 \cdot m^2) \cdot (n \cdot n^4) = \frac{\boxed{}}{\boxed{}} \cdot m^{\boxed{}} \cdot n^{\boxed{}} \\ \text{b) } &\text{simplificada} \end{aligned}$$

Asociativa +

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$$\frac{-26m^4n^7}{14mn^2} \text{ fracción } = \frac{\boxed{}}{\boxed{}} \cdot \frac{m^4}{m} \cdot \frac{n^7}{n^2} =$$

$$\begin{aligned} &= \frac{\boxed{}}{\boxed{}} \cdot m^{\boxed{}} \cdot n^{\boxed{}} \\ \text{c) } & \end{aligned}$$

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Pot. de pot.

$$(-3m^2n^5)^3 = (-3)^3 \cdot (m^2)^3 \cdot (n^5)^3 =$$

$$\begin{aligned} &= \boxed{} \cdot m^{\boxed{}} \cdot n^{\boxed{}} \\ \text{d) } & \end{aligned}$$

Asociativa +

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Distributiva

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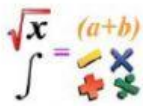
2. Opera con $p(x) = -3x^2 + 5x - 7$, $q(x) = 4x - x^3 + 6 - 2x^2$ y $r(x) = 9 - x + 5x^3$:

$$p(x) + q(x) = (-3x^2 + 5x - 7) + (-x^3 - 2x^2 + 4x + 6) =$$

$$\begin{aligned} \text{a) } &= -x^3 + (-3x^2 - 2x^2) + (5x + 4x) + (-7 + 6) = \boxed{}x^3 - \boxed{}x^2 + \boxed{}x - \boxed{} \end{aligned}$$

$$q(x) + r(x) = (\boxed{}x^3 + \boxed{}x^2 + \boxed{}x + \boxed{}) + (\boxed{}x^3 + \boxed{}x^2 + \boxed{}x + \boxed{}) =$$

$$\begin{aligned} \text{b) } &= (-x^3 + \boxed{}x^3) - 2x^2 + (\boxed{}x + 4x) + (\boxed{} + 9) = \boxed{}x^3 - \boxed{}x^2 + \boxed{}x + \boxed{} \end{aligned}$$



3. Opera con $p(x) = -3x^2 + 5x - 7$, $q(x) = 4x - x^3 + 6 - 2x^2$ y $r(x) = 9 - x + 5x^3$:

$$\begin{aligned} p(x) - r(x) &= (\square x^2 + \square x + \square) - (\square x^3 + \square x^2 + \square x + \square) = \\ &= (\square x^2 + \square x + \square) + (\square x^3 + \square x^2 + \square x + \square) = \\ \text{a)} \quad &= \square x^3 - \square x^2 + \square x + \square \end{aligned}$$

$$\begin{aligned} q(x) - p(x) &= (\square x^3 + \square x^2 + \square x + \square) - (\square x^2 + \square x + \square) = \\ &= (\square x^3 + \square x^2 + \square x + \square) + (\square x^2 + \square x + \square) = \\ \text{b)} \quad &= \square x^3 - \square x^2 + \square x + \square \end{aligned}$$

4. Opera $p(x) = -3x^2 + 5x - 7$, $q(x) = 6 - 2x^2$ y $r(x) = x + 5x^3$:

$$\begin{aligned} p(x) \cdot q(x) &= (-3x^2 + 5x - 7) \cdot (-2x^2 + 6) = \\ &= \underbrace{-3x^2 \cdot (-2x^2)} + \underbrace{-3x^2 \cdot 6} + \underbrace{5x \cdot (-2x^2)} + \underbrace{5x \cdot 6} - \underbrace{7 \cdot (-2x^2)} - \underbrace{7 \cdot 6} = \\ \text{a)} \quad &= \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square = \\ &= \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x + \square \end{aligned}$$

$$\begin{aligned} r(x) \cdot p(x) &= (5x^3 + x) \cdot (-3x^2 + 5x - 7) = \\ &= \underbrace{5x^3 \cdot (-3x^2)} + \underbrace{5x^3 \cdot 5x} + \underbrace{5x^3 \cdot (-7)} + \underbrace{x \cdot (-3x^2)} + \underbrace{x \cdot 5x} + \underbrace{x \cdot (-7)} = \\ \text{b)} \quad &= \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square = \\ &= \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x^\square + \square \cdot x + \square \end{aligned}$$