

1.- Dados los polinomios:  $P(x) = 4x^3 - 6x^2 + 14$  y  $Q(x) = 2x^3 + 3x^2 + 5x$ . Calcula:

a)  $2P(x) - 3Q(x)$     b)  $P(x) \cdot Q(x)$     c)  $P(-1)$     d)  $Q(-2)$

$$\begin{aligned} \text{a) } & 2(4x^3 - 6x^2 + 14) - 3(2x^3 + 3x^2 + 5x) = \\ & = 8x^3 - 12x^2 + 28 - 6x^3 - 9x^2 - 15x = \\ & = 2x^3 - 21x^2 - 15x + 28 \end{aligned}$$

$$\begin{aligned} \text{b) } & (4x^3 - 6x^2 + 14) \cdot (2x^3 + 3x^2 + 5x) = \\ & = 8x^6 + 12x^5 + 20x^4 - 12x^5 - 18x^4 - 30x^3 + 28x^3 + 42x^2 + 70x = \\ & = 8x^6 + 2x^4 - 2x^3 + 42x^2 + 70x \end{aligned}$$

$$\text{c) } P(-1) = 4 \cdot (-1)^3 - 6 \cdot (-1)^2 + 14 = -4 - 6 + 14 = 4$$

$$\text{d) } Q(-2) = 2 \cdot (-2)^3 + 3 \cdot (-2)^2 + 5 \cdot (-2) = -16 + 12 - 10 = -14$$

2.- Divide:  $(x^5 + 2x^3 - x - 8) : (x^2 - 2x + 1)$

$$\begin{array}{r} x^5 + 2x^3 - x - 8 \\ -x^5 + 2x^4 - x^3 \\ \hline 2x^4 + x^3 - x - 8 \\ -2x^4 + 4x^3 - 2x^2 \\ \hline 5x^3 - 2x^2 - x - 8 \\ -5x^3 + 10x^2 - 5x \\ \hline 8x^2 - 6x - 8 \\ -8x^2 + 16x - 8 \\ \hline 10x - 16 \end{array}$$

$$\begin{array}{r} x^2 - 2x + 1 \\ \hline x^3 + 2x^2 + 5x + 8 \end{array}$$