



**Mi Universidad**

## **Problemario**

*Nombre del Alumno : Leo Geovani García García*

*Nombre del tema : Operaciones Fundamentales*

*Parcial 3*

*Nombre de la Materia : Álgebra*

*Nombre del profesor : Juan José Ojeda Trujillo*

*Nombre de la Licenciatura : Técnico En enfermería general*

*Semestre I*

$$(3A^3 + 5A^2 - 4) : (3A)$$

$$\frac{3A^3}{3A} + \frac{5A^2}{3A} - \frac{4}{3A} = 3A^2 + \frac{5A}{3} - \frac{4}{3A}$$

$$\left(\frac{2}{3}A^2B^2 - \frac{1}{4}A^2B^4 + \frac{5}{6}AB^4 - \frac{2}{5}B^5\right) : \left(\frac{1}{2}AB^2\right)$$

$$-\frac{2}{6}A + \frac{1}{8}AB^2 - \frac{5}{12}B^2 + \frac{1}{5}B^3$$

$$(x^4 - 2x^3 - 11x^2 + 30x - 20) : (x^2 + 3x - 2)$$

$$\begin{array}{r} x^2 - 5x + 6 \\ x^2 + 3x - 2 \overline{) x^4 - 2x^3 - 11x^2 + 30x - 20} \\ \underline{-x^4 + 3x^3 + 2x^2} \phantom{- 20} \\ -5x^3 - 9x^2 + 30x - 20 \\ \underline{+5x^3 + 15x^2 - 10x} \phantom{- 20} \\ 6x^2 + 20x - 20 \\ \underline{-6x^2 - 18x + 18} \\ 2x - 2 \end{array}$$

$$(x^6 + 5x^4 + 3x^2 - 2x) : (x^2 - x + 3)$$

$$\begin{array}{r} x^4 + x^3 + 3x^2 - 6 \\ x^2 - x + 3 \overline{) x^6 + 0x^5 + 5x^4 + 0x^3 + 3x^2 - 2x + 0} \\ \underline{-x^6 + x^5 - 3x^4} \phantom{+ 0} \\ x^5 + 2x^4 + 0x^3 + 3x^2 - 2x \\ \underline{-x^5 + x^4 - 3x^3} \phantom{+ 0} \\ 3x^4 - 3x^3 + 3x^2 - 2x \\ \underline{-3x^4 + 3x^3 - 9x^2} \phantom{- 2x} \\ -6x^2 - 2x \end{array}$$

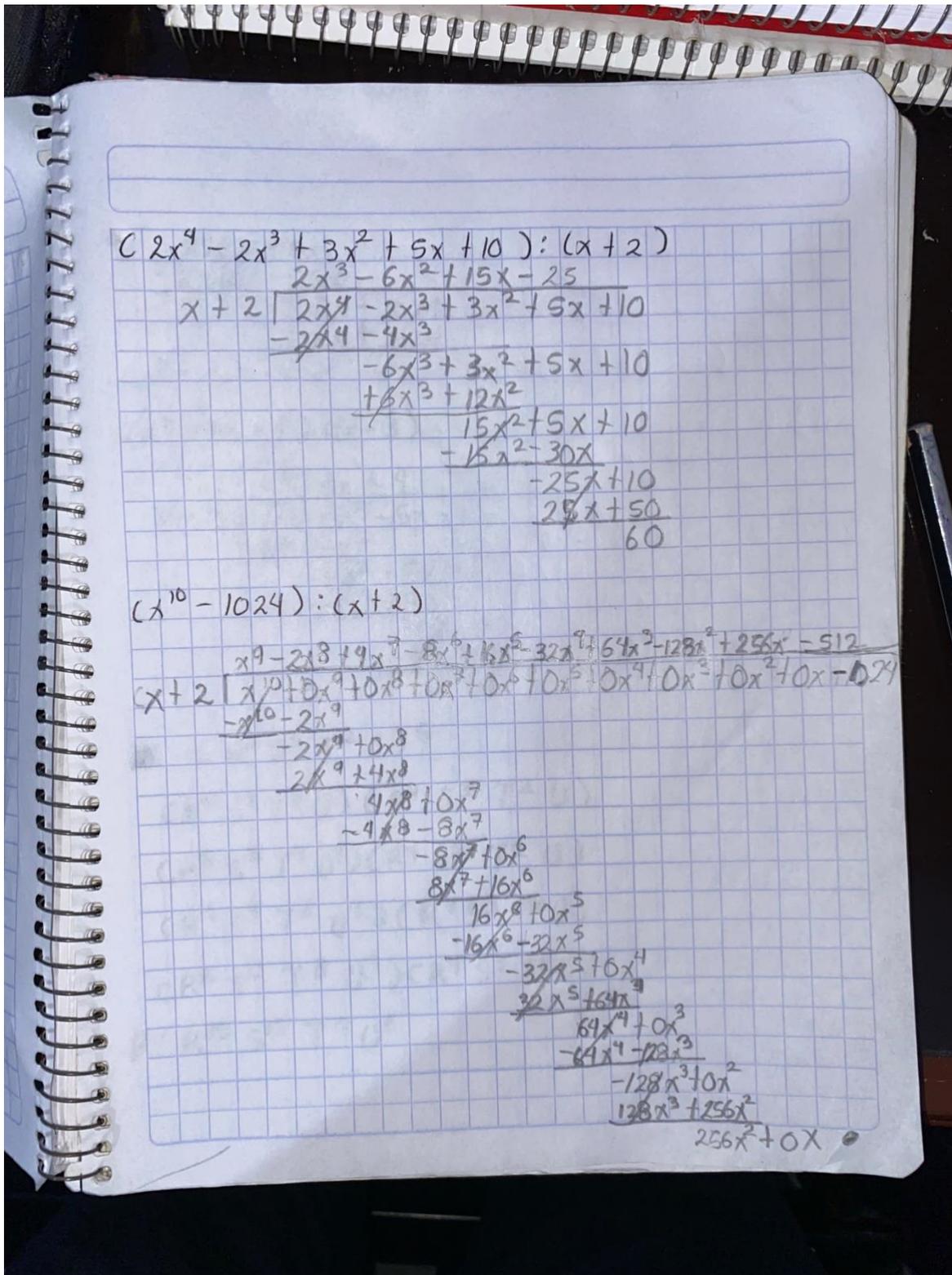
$$\begin{array}{r} -6x^2 - 2x + 0 \\ \underline{6x^2 - 6x + 18} \\ -8x + 18 \end{array}$$

$$(x^4 - 2x^3 - 11x^2 + 30x - 20) : (x^2 + 3x - 2)$$

$$\begin{array}{r} x^2 - 5x + 6 \\ x^2 + 3x - 2 \overline{) x^4 - 2x^3 - 11x^2 + 30x - 20} \\ \underline{-x^4 - 3x^3 + 2x^2} \\ -5x^3 - 9x^2 + 30x - 20 \\ \underline{5x^3 + 15x^2 - 10x} \\ 6x^2 + 20x - 20 \\ \underline{-6x^2 - 18x + 12} \\ 2x - 8 \end{array}$$

$$(x^6 + 5x^4 + 3x^2 - 2x) : (x^2 - x + 3)$$

$$\begin{array}{r} x^4 + x^3 + 3x^2 + 6 \\ x^2 - x + 3 \overline{) x^6 + 0x^5 + 5x^4 + 0x^3 + 3x^2 - 2x + 0} \\ \underline{-x^6 + x^5 - 3x^4} \\ x^5 + 2x^4 + 0x^3 + 3x^2 - 2x + 0 \\ \underline{-x^5 + x^4 - 3x^3} \\ 3x^4 - 3x^3 + 3x^2 - 2x + 0 \\ \underline{-3x^4 + 3x^3 - 9x^2} \\ 6x^2 - 2x + 0 \\ \underline{-6x^2 + 6x - 18} \\ 4x - 18 \end{array}$$



$$(2x^4 - 2x^3 + 3x^2 + 5x + 10) : (x + 2)$$

$$\begin{array}{r} 2x^3 - 6x^2 + 15x - 25 \\ x + 2 \overline{) 2x^4 - 2x^3 + 3x^2 + 5x + 10} \\ \underline{-2x^4 - 4x^3} \phantom{+ 10} \\ -6x^3 + 3x^2 + 5x + 10 \\ \underline{+6x^3 + 12x^2} \phantom{+ 10} \\ 15x^2 + 5x + 10 \\ \underline{-15x^2 - 30x} \phantom{+ 10} \\ -25x + 10 \\ \underline{25x + 50} \\ 60 \end{array}$$

$$(x^{10} - 1024) : (x + 2)$$

$$\begin{array}{r} x^9 - 2x^8 + 4x^7 - 8x^6 + 16x^5 - 32x^4 + 64x^3 - 128x^2 + 256x - 512 \\ x + 2 \overline{) x^{10} + 0x^9 + 0x^8 + 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ \underline{-x^{10} - 2x^9} \phantom{+ 0x^8 + 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ -2x^9 + 0x^8 \phantom{+ 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ \underline{2x^9 + 4x^8} \phantom{+ 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ 4x^8 + 0x^7 \phantom{+ 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ \underline{-4x^8 - 8x^7} \phantom{+ 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ -8x^7 + 0x^6 \phantom{+ 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ \underline{8x^7 + 16x^6} \phantom{+ 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ 16x^6 + 0x^5 \phantom{+ 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ \underline{-16x^6 - 32x^5} \phantom{+ 0x^4 + 0x^3 + 0x^2 + 0x - 1024} \\ -32x^5 + 0x^4 \phantom{+ 0x^3 + 0x^2 + 0x - 1024} \\ \underline{32x^5 + 64x^4} \phantom{+ 0x^3 + 0x^2 + 0x - 1024} \\ 64x^4 + 0x^3 \phantom{+ 0x^2 + 0x - 1024} \\ \underline{-64x^4 - 128x^3} \phantom{+ 0x^2 + 0x - 1024} \\ -128x^3 + 0x^2 \phantom{+ 0x - 1024} \\ \underline{128x^3 + 256x^2} \phantom{+ 0x - 1024} \\ 256x^2 + 0x - 1024 \end{array}$$

$$\begin{array}{r}
 256x^2 + 0x \\
 - 256x^2 - 512x \\
 \hline
 -512x - 1024 \\
 512x + 1024 \\
 \hline
 0
 \end{array}$$

$$(x^3 - 5x - 1) : (x - 3)$$

$$\begin{array}{r}
 x^2 + 3x + 4 \\
 x - 3 \overline{) x^3 + 0x^2 - 5x - 1} \\
 \underline{-x^2 + 3x^2} \phantom{-1} \\
 3x^2 - 5x - 1 \\
 \underline{-2x^2 + 6x} \phantom{-1} \\
 4x - 1 \\
 \underline{-4x + 12} \\
 11
 \end{array}$$

$$(R^4 S^3 T^2 U)^5$$

$$(R^4 S^3 T^2 U)(R^4 S^3 T^2 U)$$

$$(R^8 S^6 T^4 U^2)(R^4 S^3 T^2 U)$$

$$(R^{12} S^9 T^6 U^3)(R^4 S^3 T^2 U)$$

$$(R^{16} S^{12} T^8 U^4)(R^4 S^3 T^2 U)$$

$$R = R^{20} S^{15} T^{10} U^5$$

$$(-A^3 B^4 C^2 D^5)^6$$

$$(-A^3 B^4 C^2 D^5) (-A^3 B^4 C^2 D^5)$$

$$(-A^6 B^8 C^4 D^{10}) (-A^3 B^4 C^2 D^5)$$

$$(-A^9 B^{12} C^6 D^{15}) (-A^3 B^4 C^2 D^5)$$

$$(-A^{12} B^{16} C^8 D^{20}) (-A^3 B^4 C^2 D^5)$$

$$(-A^{15} B^{20} C^{10} D^{25}) (-A^3 B^4 C^2 D^5)$$

$$R = A^{18} B^{24} C^{12} D^{30}$$

$$(-3x^6 y^3 z^2) (-3x^6 y^3 z^2)$$

$$9x^{12} y^6 z^4$$

$$(2/5 A^2 B - 4/3 AB - 4) (2/2 AB^2)$$

$$\frac{3}{5} AB^{-1} - 2B^{-1} - 6AB^2 = \frac{3}{5} \frac{A}{B} - \frac{2}{B}$$

$$R = \frac{3}{5} \frac{A}{B} - \frac{2}{B} - 6AB^2$$



$$(3x^3 + 2y^2)(3x^3 + 2y^2)^2$$

$$(3x^3 + 2y^2)(3x^3 + 2y^2)$$

$$\begin{array}{r} 9x^6 + 6x^3y^2 \\ 6x^3y^2 + 4y^4 \end{array}$$

$$(9x^6 + 12x^3y^2 + 4y^4)(3x^3 + 2y^2) =$$

$$\begin{array}{r} 27x^9 + 36x^6y^2 + 12x^3y^4 \\ 18x^6y^2 + 24x^3y^4 + 8y^6 \end{array}$$

$$\hline 27x^9 + 54x^6y^2 + 36x^3y^4 + 8y^6$$

$$(2/9 A^3 + 1/3 B^2)(2/9 A^3 + 1/3 B^2)$$

$$\frac{1}{9} A^6 + \frac{1}{9} A^3 B^2$$

$$\frac{1}{9} A^3 B^2 + \frac{1}{9} B^4$$

$$\hline \frac{1}{9} A^6 + \frac{2}{9} A^3 B^2 + \frac{1}{9} B^4$$