Nombre del Alumno : Sandy Yuliza

Vazquez Gómez Nombre del tema :

PROBLEMARIO

Nombre de la Materia : ÁLGEBRA 1

Nombre del profesor :

JUAN JOSE OJEDA TRUJILLO

Nombre de la Licenciatura

BACHILLERATO TÉCNICO EN

ADMINISTRACIÓN DE RECURSOS

HUMANOS Cuatrimestre 1

Fecha de elaboración de 10 de

noviembre de 2023

① $(3A^3 + 5A^2 - 4) \div (3A)$

$$\begin{array}{r} A^2 + \frac{5}{3}A \\ 3A \overline{\smash{\big)}\ 3A^3 + 5A^2 - 4} \\ -\underline{3A^3\ \ 5A^2} \\ -3A^2 \\ -\underline{5A^2 - 4} \\ -4 \end{array}$$

$R = A^2 + \frac{5}{3}A \left(\dfrac{-4}{3A} \right)$

② $(2/3\ A^2B^2 - 1/4\ A^2B^4 + 5/6\ AB^4 - 2/5\ B^5) \div (-1/2\ AB^2)$

$$\frac{\frac{2}{3}a^2b^2}{-\frac{1}{2}ab^2} \qquad \frac{-\frac{1}{4}a^2b^4}{-\frac{1}{2}ab^2} \qquad \frac{+\frac{5}{6}ab^4}{-\frac{1}{2}a b^2} \qquad \frac{-\frac{2}{5}b^5}{-\frac{1}{2}ab^2}$$

$$\frac{4}{3ab^2} + \qquad \frac{4}{2ab^2} - \frac{10}{6}b^2 - \frac{4}{5ab^3}$$

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

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

$R = x^2 - 5x + 6 \left(\dfrac{2x - 8}{x^2 + 3x - 2} \right)$

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

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

⑤ $(x^4 - 2x^3 - 11x^2 + 30x - 20) \div (x^2 + 3x - 2)$

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

$$R = x^2 - 5x + 6 \left(\dfrac{2x-8}{x^2+3x-2}\right)$$

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

$$
\begin{array}{r}
x^3 + x^2 2x + 3x \, 2x \\
x^2 - x + 3 \,\big|\, \overline{x^6 + 5x^4 + 3x^2 - 2x} \\
-\underline{x - 2x^2} \\
2x^2 + 6x^2 \\
\underline{2x^2 - 3x^2} \\
-3x^2 \quad 4 \\
-\underline{3x^2 - 2x} \\
-2x \\
+\underline{6x} \\
4x
\end{array}
$$

⑦ $(2x^4 - 2x^3 + 3x^2 + 5x + 10) \div (x + 2)$

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

$$R = 2x^3 - 6x^2 + 15x - 25 \left(\dfrac{60}{x+2}\right)$$

⑧ $x + 2\,\big|\,\overline{x^{10} - 1024}$

$$
\begin{array}{r}
x^9 - 2x^8 + 4x^7 + 8x^6 - 16x^5 + 32x^4 + 64x^3 + 124x^2 + 512 \\
\end{array}
$$

$x + 2\,\big|\,\overline{x^{10} + 0x^9 + 0x^8 + 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x + 1024}$

$\underline{-x^{10} - 2x^9}$

$\quad -2x^9 + 0x^8$

$\quad \underline{-2x^9 - 4x^8}$

$\qquad +4x^8 + 0x^7$

$\qquad \underline{-4x^8 - 8x^7}$

$\qquad\quad -8x^7 + 0x^6$

$\qquad\quad \underline{+8x^7 - 16x^6}$

$\qquad\qquad -16x^6 + 0x^5$

$\qquad\qquad \underline{+16x^6 - 32x^5}$

$\qquad\qquad\quad -32x^4 + 0x^4$

$\qquad\qquad\quad \underline{-32x^4 - 64x^4}$

$\qquad\qquad\qquad -64x^4 + 0x^3$

$\qquad\qquad\qquad \underline{-64x^4 + 124x^4}$

$\qquad\qquad\qquad\quad +124x + 0x^2$

$\qquad\qquad\qquad\quad \underline{-124x^2 - 248x^2}$

$\qquad\qquad\qquad\qquad -248x - 1024$

$\qquad\qquad\qquad\qquad \underline{-248x - 1024}$

⑨ $(x^3 - 5x - 1) \div (x - 3)$

$$\begin{array}{r} x^2 + 3x + 4 \\ x-3\overline{)x^3 - 5x - 1} \\ -x^3 + 3x^2 \\ \hline 3x^2 - 5x \\ -3x^2 + 9x \\ \hline 4x - 1 \\ 4x + 12 \\ \hline 11 \end{array}$$

$R = x^2 + 3x + 4 \left(\dfrac{11}{x-3}\right)$

⑩ $(R^4 S^3 T^2 U)^5$

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

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

⑪ $(-A^3 B^4 C^2 D^5)^6$

$(-A^3)^6 \times B^{24} C^{12} D^{30}$

$(A^3)^6 \times B^{24} C^{12} D^{30}$

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

⑫ $(-3x^6 y^3 z^2)(-3x^6 y^3 z^2)$

$3x^6 y^3 z^2 \times 3x^6 y^3 z^2$

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

⑬ $(2/5 A^2 B - 4/3 AB - 4)(3/2 AB^2)$

$\left(\dfrac{2}{5} A^2 B - \dfrac{4}{3} A \times B - 4\right) \times \dfrac{3}{2} AB^2$

$\dfrac{3}{5} A^3 B^3 - 2A^2 B^3 - 6AB^2$

⑭ $(3x^3 + 2y^2)(3x^3 + 2y^3)^2$

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

$27x^9 + 36x^6 y^3 + 12x^3 y^6 + 18x^6$

$y^2 + 24x^3 y^5 + 8y^8$

⑮ $(2/6 A^3 + 1/3 B^2)(2/6 A^3 + 1/3 B^2)$

$\dfrac{4}{36} a^3 + \dfrac{1}{6} + b^2$

$\dfrac{1}{18} a^3 b^2 + \dfrac{1}{9} b^2$

$\dfrac{1}{9} a^6 + \dfrac{2}{9} a^3 b^2 + \dfrac{1}{9} b^4$