Problemario

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Problemario de álgebra

Parcial 3

Álgebra

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Administración en recursos humanos

1er cuatrimestre

PROBLEMARIO DE LA 3ra UNIDAD

1.- $(3a^3 + 5a^2 - 4) \div (3a)$

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

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

2.- $(\frac{2}{3}a^2b^2 - \frac{1}{4}a^2b^4 + \frac{5}{6}ab^4 - \frac{2}{5}b^5) \div (-\frac{1}{2}ab^2)$

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

$$\frac{4}{3}ab^0 - \frac{2}{4}ab^2 + \frac{10}{6}a^0b^2 - \frac{4}{5}ab^3$$

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

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

$$\begin{array}{r|l} x^4 - 2x^3 - 11x^2 + 30x - 20 & x^2 + 3x - 2 \\ -x^4 - 3x^3 + 2x^2 & x^2 - 5x + 6 \\ \hline -5x^3 - 9x^2 + 30x & \\ 5x^3 + 15x^2 - 10x & \\ \hline 6x^2 + 20x - 20 & \\ -6x^2 - 18x + 12 & \\ \hline 2x - 8 & \end{array}$$

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

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

$x^2-x+3 \;\overline{)\; x^6+0x^5+5x^4+0x^3+3x^2-2x+0}$

$x^4+x^3+3x^2-6$

$-x^6+x^5-3x^4$

$x^5+2x^4+0x^3$

$-x^5+x^4-3x^3$

$3x^4-3x^3+3x^2$

$-3x^4+3x^3-9x^2$

$-6x^2-2x+0$

$+6x^2-6x+18$

$-8x+18$

$R = x^4+x^3+3x^2-6\left(\frac{-8x+18}{x^2-x+3}\right)$

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

$x^2+3x-2 \;\overline{)\; x^4-2x^3-11x^2+30x-20}$

x^2-5x+6

$-x^4-3x^3+2x^2$

$-5x^3-9x^2+30x$

$5x^3+15x^2-10x$

$6x^2+20x-20$

$-6x^2-18x+12$

$2x-8$

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

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

$x^2-x+3 \;\overline{)\; x^6+0x^5+5x^4+0x^3+3x^2-2x+0}$

$x^4+x^3+3x^2-6$

$-x^6+x^5-3x^4$

$x^5+2x^4+0x^3$

$-x^5+x^4-3x^3$

$3x^4-3x^3+3x^2$

$-3x^4+3x^3-9x^2$

$-6x^2-2x+0$

$6x^2-6x+18$

$-8x+18$

$R = x^4+x^3+3x^2-6\left(\frac{-8x+18}{x^2-x+3}\right)$

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

$x+2 \;\overline{)\; 2x^4-2x^3+3x^2+5x+10}$

$2x^3-6x^2+15x-25$

$-2x^4-4x^3$

$-6x^3+3x^2$

$6x^3+12x^2$

$15x^2+5x$

$-15x^2-30x$

$-25x+10$

$25x+50$

60

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

8.- $(x^{10} - 1024) \div (x + 2)$

$x + 2 \;\overline{)\; x^{10} + 0x^9 + 0x^8 + 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024}$

$x^9 - 2x^8 + 4x^7 - 8x^6 + 16x^5 - 32x^4 + 64x^3 - 128x^2 + 256x - 512$

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

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

$+2x^9 + 4x^8$

$4x^8 + 0x^7$

$-4x^8 - 8x^7$

$-8x^7 + 0x^6$

$8x^7 + 16x^6$

$16x^6 + 0x^5$

$-16x^6 - 32x^5$

$-32x^5 + 0x^4$

$32x^5 + 64x^4$

$64x^4 + 0x^3$

$-64x^4 - 128x^3$

$-128x^3 + 0x^2$

$128x^3 + 256x^2$

$256x^2 + 0x$

$-256x^2 - 512x$

$-512x - 1024$

$512x + 1024$

0

$R = x^9 - 2x^8 + 4x^7 - 8x^6 + 16x^5 - 32x^4 + 64x^3 - 128x^2 + 256x - 512$

9: $(x^3 - 5x - 1) \div (x - 3)$

$x - 3 \;\overline{)\; x^3 - 5x - 1}$ → $x^2 + 3x + 4$

$-x^3 + 3x^2$

$3x^2 - 5x$

$-3x^2 + 9x$

$4x - 1$

$-4x + 12$

11

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

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

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

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

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

12: $(-3x^6 y^3 z^2)(-3x^6 y^3 z^2)$

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

13: $(2/5\, a^2b - 4/3\, ab - 4)(3/2\, ab^2)$

$R = 6/10\, a^2b^2 - 12/6\, a^2b^2 - 12/2\, ab^2$

$3/5\, a^2b^2 - 2\, a^2b^2 - 6\, ab^2$

14: $(3x^3 + 2y^2)(3x^3 + 2y^3)^2$

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

$9x^6 + 6x^3y^3 + 6x^3y^2 + 4y^5$

$9x^6 + 6x^3y^3 + 6x^3y^2 + 4y^5 \;(3x^3 + 2y^3)$

14.- $9x^6 + 6x^3y^3 + 6x^3y^2 + 4y^5(3x^3 + 2y^3)$

$27x^9 + 18x^6y^3 + 18x^6y^2 + 12x^3y^5$

$18x^9 + 12x^3y^6 + 12x^3y^5 + 8y^8$

$R = 27x^9 + 18x^9 + 18x^6y^3 + 18x^6y^2 + 12x^3y^5 + 12x^3y^6 + 12x^3y^5 + 8y^8$

15.- $(2/6\,a^3 + 1/3\,b^2)(2/6\,a^3 + 1/3\,b^2)$

$\frac{4}{36}a^6 + \frac{2}{18}a^3b^2$

$\frac{2}{18}a^3b^2 + \frac{1}{9}b^4$

$9a^6 + 18a^3b^2 + 1/9\,b^4$