

Trabajo practico evaluativo

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Trabajo Practico Evaluativo

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C.A.

binomio Perfecto

$$(x+2)^2 = (x^2 - 2x + 4)$$

$$\begin{aligned} 1) \frac{x^3 + 8}{x^2 - 9} \cdot \frac{(x+3)^2}{(x+3)(x^2 - 2x + 4)} &= \\ \frac{(x+2)^3}{(x-3)(x+3)} \cdot \frac{(x+3)^2}{(x+3)(x^2 - 2x + 4)} &= \\ \frac{(x+2) \cdot (x+2)^2}{(x-3)} \cdot \frac{1}{(x^2 - 2x + 4)} &= \end{aligned}$$

$$\frac{(x+2) \cdot \cancel{(x^2 - 2x + 4)}}{(x-3) \cdot \cancel{(x^2 - 2x + 4)}} = \left[\frac{(x+2)}{(x-3)} \right]$$

$$2) \quad | -3x + 4 | \leq 5$$

$$-3x + 4 \leq 5$$

$$\vee \quad 3x - 4 \leq 5$$

$$\left[x \geq -\frac{1}{3} \right]$$

$$\vee \quad \begin{aligned} 3x &\leq 9 \\ \left[x &\leq 3 \right] \end{aligned}$$

$$\left[-\frac{1}{3} \leq x \leq 3 \right]$$

$$3) P(x) = -4x^3 + Kx + 2$$

$$Q(x) = x - 2$$

$$R(x) = -40$$

$$P(2) = -4(2)^3 + K(2) + 2$$

$$P(2) = R(x)$$

$$-40 = -4 \cdot 8 + 2K + 2$$

$$-40 + 32 - 2 = 2K$$

$$\frac{-10}{2} = K$$

$$\boxed{-5 = K}$$

$$4) -\sqrt{125} + \sqrt{27} - \frac{7}{2} + \frac{2}{1-\sqrt{5}}$$

$$-\sqrt{25} \cdot \sqrt{5} + \sqrt{9} \cdot \sqrt{3} - \frac{7}{2} + \frac{2}{1-\sqrt{5}} \cdot \frac{1+\sqrt{5}}{1+\sqrt{5}}$$

$$-5\sqrt{5} + 3\sqrt{3} - \frac{7}{2} - \frac{1+\sqrt{5}}{2}$$

$$\frac{2(-5\sqrt{5} + 3\sqrt{3}) - 7 - (1+\sqrt{5})}{2}$$

$$\frac{-10\sqrt{5} + 6\sqrt{3} - 7 - 1 - \sqrt{5}}{2}$$

$$\boxed{\frac{-11\sqrt{5} + 6\sqrt{3} - 8}{2}} \approx -11$$

C.A

$$\frac{2(1+\sqrt{5})}{(1+\sqrt{5})(1-\sqrt{5})} = \frac{2(1+\sqrt{5})}{1-5} = \frac{2(1+\sqrt{5})}{-4}$$

$$= \frac{1+\sqrt{5}}{-2}$$

4) b) $(12-3x) \cdot (x+1) \leq 0$

	$(-\infty; -1)$	-1	$(-1; 4)$	4	$(4; +\infty)$
$(12-3x)$	+	15	+	0	-
$(x+1)$	-	0	+	5	+
Result:	-	0	+	0	-

$$S = (-\infty; -1] \cup [4; +\infty)$$

5)

$$\begin{cases} 3x + 2y + z = 1 \\ 5x + 3y + 4z = 2 \\ x + y - z = 0 \end{cases}$$

$$A = \begin{pmatrix} 3 & 2 & 1 \\ 5 & 3 & 4 \\ 1 & 1 & -1 \end{pmatrix} \begin{vmatrix} 1 \\ 2 \\ 0 \end{vmatrix}$$

$$A^* = \begin{pmatrix} 2 & 1 & 1 \\ 3 & 4 & 2 \\ 1 & -1 & 0 \end{pmatrix}$$

$$\text{Rango}(A) = -9 + 5 + 8 - 3 + 10 - 12 = -1$$

$$\text{Rango}(A^*) = 0 + (-3) + 2 - 4 - 0 - (-9) = -1$$

$$n^{\circ} = 3$$

$$R(A) = R(A^*) \neq n$$

S.C.I.