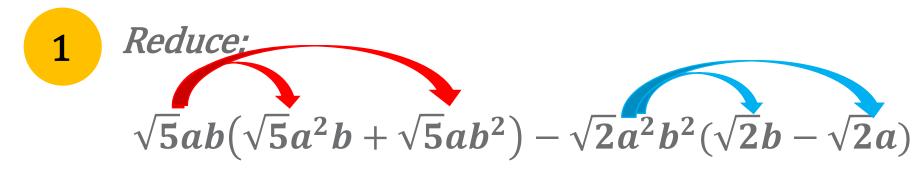
ALGEBRA

2th



RETROALIMENTACIÓN SESION 2





Resolución:

$$= 5a^3b^2 + 5a^2b^3 - 2a^2b^3 + 2a^3b^2$$

Rpta:

$$7a^3b^2 + 3a^2b^3$$

2 Sean los polinomios

$$A = 3x^3 + 4x - 1$$
; $B = 3x - 2$.

Calcule la suma de coeficientes luego de efectuar A. B

Resolución:

A. B =
$$(3x^3 + 4x - 1)(3x - 2)$$

S.C.=9-6-12-11+2

$$A.B = 9x^4 - 6x^3 + 12x^2 - 8x - 3x + 2$$

$$A.B = 9x^4 - 6x^3 - 12x^2 - 11x + 2$$

Rpta: Suma de coef. = -18

3

Reduce

$$(4x-1)(2x-3)-(x-1)(x+2)-7x^2+4x$$

E indique el mayor coeficiente.

Resolución:

$$(4x-1)(2x-3) - (x-1)(x+2) - 7x^{2} + 4x$$

$$= 8x^{2} -12x -2x +3 - (x^{2} +2x -x -2) -7x^{2} + 4x$$

$$= 8x^{2} -14x +3 - (x^{2} +x -2) -7x^{2} + 4x$$

$$= -14x +3 -x^{2} -x +2 -7x^{2} + 4x$$

$$= -11x +5$$



Siendo
$$x + x^{-1} = 4$$
; $calcule: x^2 + x^{-2}$.

Resolución:

Recuerda

$$(a+b)^2 \equiv a^2 + 2ab + b^2$$

Elevamos al cuadrado

$$x + x^{-1} = 4$$

 $(x + x^{-1})^2 = (4)^2$

$$x^{2} + 2(x)(x^{-1}) + x^{-2} = 16$$

$$x^{2} + 2 + x^{-2} = 16$$

Rpta:

$$x^2 + x^{-2} = 14$$

$$(a+b)(a-b) = a^2 - b^2$$

$$A = \sqrt[8]{(a+2)(a-2)(a^2+4)(a^4+16) + 256}$$

Resolución:

$$A = \sqrt[8]{(a^2 - 4)(a^2 + 4)(a^4 + 16) + 256}$$

$$A = \sqrt[8]{(a^4 - 16)(a^4 + 16) + 256}$$

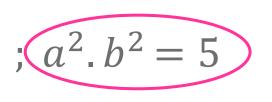
$$A = \sqrt[8]{(a^8 - 256) + 256}$$

$$A = \sqrt[8]{a^8} = a^{8/8}$$





Sabiendo que $a^2+b^2 = 6$; $a^2.b^2 = 5$ Calcule: a^4+b^4





$$(m+n)^2 = m^2 + 2mn + n^2$$

Resolución:

$$a^2 + b^2 = 6$$

$$(a^2+b^2)^2=(6)^2$$

$$(a^2)^2 + 2(a^2)(b^2) + (b^2)^2 = 36$$

$$a^4 + 2 (5) + b^4 = 36$$

Rpta:
$$a^4 + b^4 = 26$$



Sea
$$x + \frac{1}{x} = 4$$
. Calcule $x^3 + \frac{1}{x^3}$

$$x^3 + \frac{1}{x^3}$$

Recuerda

Resolución:

$$x + \frac{1}{x} = 4$$
 Elevamos al cubo

$$(x + \frac{1}{x})^3 = (4)^3$$

$$(x)^3 + (\frac{1}{x})^3 + 3(x)(\frac{1}{x})(x + \frac{1}{x}) = 64$$

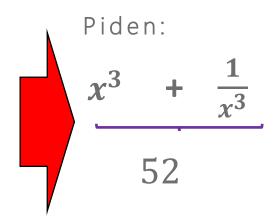
$$x^3 + \frac{1}{x^3} + 3 \cdot (1) \cdot (4) = 64$$

$$x^3 + \frac{1}{x^3} + 12 = 64$$

$$x^3 + \frac{1}{x^3} = 52$$

Aplicando Cauchy

 $(a+b)^3 \equiv a^3 + b^3 + 3ab(a+b)$



Sabiendo que $x^2 + 5x = 2$, reduzca

$$E=(x+3)(x+2)(x+4)(x+1)-8$$

Resolución:

Utilizamos la identidad de Stevin:

$$(x + a)(x + b) = x^2 + (a + b)x + ab$$

$$E = (x^2 + 5x + 6)(x^2 + 5x + 4) - 8$$

$$E = (2 + 6)(2 + 4) -8$$

$$E = (8)(6) - 8$$

Rpta:

9 Reduce

$$P = (\underline{a+4})(\underline{a^2-4a+16}) + (\underline{a-2})(\underline{a^2+2a+4}) - 2\underline{a^3}$$

Resolución:

Recuerda

$$(a+b)(a^2-ab+b^2) \equiv a^3 + b^3$$

$$P = q^{37} + 4^3 + q^{37} - 2^3$$

$$P = 64 - 8$$

$$(a-b)(a^2+ab+b^2) \equiv a^3-b^3$$

$$-2a^{3}$$



El costo de 1kilo de azúcar (en soles) se obtiene de reducir

$$F = (3x^4 + 1)(3x^4 - 1) - (3x^4 - 1)^2 - 6x^4 + 6$$

¿Cuál es el costo de un saco de azúcar que contiene 25kilos?

Resolución:



$$(a+b)^2 = a^2 + 2ab + b^2$$
 $(a+b)(a-b) = a^2 - b^2$

$$(a+b)(a-b) = a^2 - b^2$$

$$F = (3x^{4} + 1)(3x^{4} - 1) - (3x^{4} - 1)^{2} - 6x^{4} + 6$$

$$F = (3x^{4})^{2} - (1)^{2} - ((3x^{4})^{2} - 2(3x^{4})(1) + (1)^{2}) - 6x^{4} + 6$$

$$F = 9x^{8} - 1 - (9x^{8} - 6x^{4} + 1) - 6x^{4} + 6$$

$$F = 9x^{8} - 1 - (9x^{8} - 6x^{4} + 1) - 6x^{4} + 6$$

Rpta:

S/.100 por 25 kilos