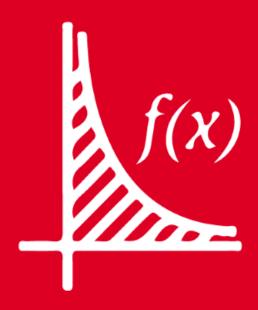
ALGEBRA

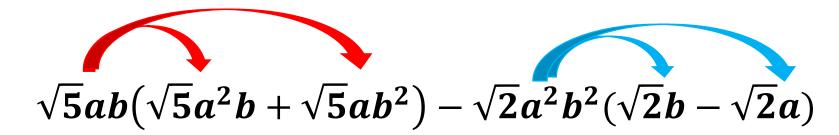
2th



RETROALIMENTACIÓN SESION 2



Reduce:



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

Rpta.:
$$7a^3b^2 + 3a^2b^3$$



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



Reduce

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

E indique el mayor coeficiente.

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

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

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

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

$$= -11x + 5$$
mayor coef.

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

Resolución:

Recuerda

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

Elevamos al cuadrado

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

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

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

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

$$Rpta.: x^2 + x^{-2} = 14$$

5
$$A = \sqrt[8]{(a+2)(a-2)(a^2+4)(a^4+16)+256}$$

Recordar

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

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

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

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

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



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

$$a^2 \cdot b^2 = 5$$

Recordan

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

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

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

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

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

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

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

Resolución:
$$x + \frac{1}{x} = 4$$
 Elevamos al cubo $(a+b)^3 \equiv a^3 + b^3 + 3ab(a+b)$

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

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

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

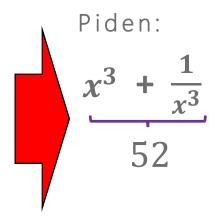
$$x^3 + \frac{1}{x^3} + 12 = 64$$

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

Recuerda

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

Aplicando Cauchy



Rpta.:

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.

E=40

Reduce

$$P = (a+4)(a^2-4a+16) + (a-2)(a^2+2a+4) - 2a^3$$

Resolución:

Recuerda

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

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

$$P = 64 - 8$$

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

$$-2a^{3}$$



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:

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

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

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

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

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

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

Rpta: S/.100 por 25 kilos