1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

[1] $3\,x^4 + 4\,x^3 + -2\,x^4 + 3\,x^3 + 4\,x + 2\,x^5 + 3\,x$

[2] $3\,x^5 + 2\,x^4 + 2\,x^3 + -4\,x^4 + 5\,x^2 + -5\,x^6 + 4\,x^4$

[3] $2\,x^4 + 2\,x^3 + 3\,x + -2\,x^5 + x^4 - 4\,x + 2\,x^5 - 2\,x^4 - 2\,x^2$

[4] $2\,x^6 + 4\,x^5 + 2\,x^4 - x^2 - 2\,x + -4\,x^6 - 4\,x^4 + 4\,x^3$

[5] $3\,x^6 - 2\,x^3 + -3\,x^5 - 2\,x^3 + 2\,x + 3\,x^3 + x^2$

[6] $x^6 + 5\,x^4 + -x^5 - 4\,x^3 - x^2 + 6\,x^5 + 4\,x^2$

[7] $-2\,x^5 - 6\,x^4 + (-3\,x^5 + 2\,x^3 - x) + (-x^4)$

[8] $2\,x^5 - 2\,x^4 + x^2 + 2\,x^6 + 5\,x^4 + -2\,x^5 + x^4 - 4\,x$

[9] $4\,x^5 - 4\,x^4 - 3\,x + -4\,x^6 - x^3 + -x^4 + 4\,x^2 + x$

[10] $6\,x^5 + x^3 + -2\,x^5 + x^4 - 4\,x^3 + 4\,x^5 - 4\,x^4 - 3\,x^3$

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

[2] $x^2y^2 + x^2y + 4\,x^2y^2 - 4\,x^2y + 2\,xy^2 + -4\,x^2y - 4\,xy^2 - 2\,xy$

[3] $4\,x^2y^2 + 16\,x^2y + -16\,x^2y - 4\,xy^2 - 4\,xy + (-16\,x^2y^2 + 2\,xy^2 - 8\,xy)$

[4] $6\,x^2y^2 - 3\,x^2y - 12\,xy^2 + -30\,x^2y^2 - 18\,x^2y + -36\,x^2y + 6\,xy^2$

[5] $28\,xy + -8\,x^2y^2 - 4\,x^2y + 16\,xy^2 + 12\,x^2y^2 + 12\,xy$

[6] $55\,x^2y + 5\,xy^2 + -75\,xy^2 + -30\,xy^2 + 75\,xy$

[7] $84\,x^2y^2 - 12\,x^2y + -36\,xy + (-36\,x^2y^2 + 108\,xy)$

[8] $21\,x^2y^2 + 21\,x^2y - 7\,xy^2 + -14\,x^2y^2 - 14\,xy^2 + 21\,xy + -14\,x^2y - 224\,xy^2$

[9] $192\,x^2y + 24\,x^2y + 8\,xy^2 + 256\,xy + -64\,x^2y^2 - 32\,x^2y$

[10] $252\,x^2y + 27\,xy + -315\,x^2y + -36\,x^2y - 162\,xy^2$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

[1] $0 - (0) + (0)$

[2] $2\,x^2y^2 + 2\,x^2y + 3\,xy^2 + 8\,x^2y^2 - 2\,x^2y - (4\,xy^2 + 4\,xy)$

[3] $16\,x^2y^2 + 2\,xy^2 + 2\,xy + 4\,x^2y^2 - 8\,xy^2 + 8\,xy - (4\,x^2y - 14\,xy)$

[4] $36\,x^2y^2 + 6\,xy^2 - 9\,xy - (-6\,x^2y^2 - 6\,x^2y + 27\,xy) + (3\,x^2y^2 + 9\,x^2y - 9\,xy^2)$

[5] $24\,x^2y^2 - 16\,x^2y + 32\,x^2y^2 - 16\,xy^2 - 4\,xy - (-48\,x^2y^2 - 16\,x^2y)$

[6] $75\,x^2y^2 + 25\,x^2y - 100\,xy^2 + 15\,xy^2 + 5\,xy - (-50\,x^2y^2 - 100\,x^2y - 15\,xy)$

[7] $-12\,x^2y^2 + 6\,x^2y + 36\,xy - (288\,x^2y^2 + 72\,x^2y) + (24\,x^2y + 12\,xy^2)$

[8] $21\,x^2y^2 + 147\,xy^2 - 21\,xy + -28\,x^2y^2 - 49\,xy^2 + 21\,xy - (49\,x^2y^2 - 98\,x^2y - 7\,xy)$

[9] $32\,x^2y + 16\,xy^2 - 24\,xy + -64\,x^2y^2 + 192\,x^2y - 128\,xy^2 - (-8\,x^2y + 192\,xy)$

[10] $-153\,x^2y + 9\,xy - (324\,x^2y^2 - 36\,xy^2 - 243\,xy) + (81\,x^2y^2 + 54\,xy^2)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

[1] $(0) \cdot (0)$

[2] $(2\, bxyz) \cdot (-b^2 x^3 y z^2)$

[3] $(-16\, b^3 x^3 y^2 z^2) \cdot (16\, b^2 x^2 y^2 z^2)$

[4] $(-3\, b^3 x^2 y^2 z^2) \cdot (27\, bxyz^3)$

[5] $(192\, bxy^3 z^2) \cdot (-256\, b^3 xy^3 z^3)$

[6] $(25\, b^2 xy^2 z^2) \cdot (-250\, bx^3 y^2 z^2)$

[7] $(-144\, bx^3 y^2 z^2) \cdot (-648\, b^3 x^2 yz^3)$

[8] $(-686\, b^3 x^3 y^3 z^3) \cdot (7\, b^3 x^2 yz)$

[9] $(-64\, bxyz) \cdot (256\, bxyz^2)$

[10] $(243\, b^2 x^3 y^2 z^3) \cdot (1458\, b^3 x^2 y^2 z)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

[1] $(2\, x) \cdot (-3\, x)$

[2] $(3\, x) \cdot (-4\, x^2 - x)$

[3] $(-3\, x) \cdot (3\, x^2 + 3\, x)$

[4] $(-3\, x^2) \cdot (-6\, x^2 - 5\, x)$

[5] $(4\, x) \cdot (-2\, x^2 + 2\, x)$

[6] $(-x^2) \cdot (x^2 - x)$

[7] $(-2\, x^2) \cdot (-x^2 + 3\, x)$

[8] $(3\, x^2) \cdot (3\, x^2)$

[9] $(-4\, x) \cdot (-x^2)$

[10] $(x^2) \cdot (8\, x^2 - 3\, x)$

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

[1] $(2\, x) \cdot (2\, x^2 + x)$

[2] $(3\, x^2 + 2\, x) \cdot (4\, x^2 + 5\, x)$

[3] $(3\, x^2 + 3\, x) \cdot (-3\, x)$

[4] $(4\, x) \cdot (-2\, x^2 + x)$

[5] $(-2\, x^2 + 4\, x) \cdot (-7\, x)$

[6] $(-6\, x^2) \cdot (-x^2)$

[7] $(4\, x^2 - 2\, x) \cdot (x^2 + 5\, x)$

[8] $(3\, x^2 - 3\, x) \cdot (7\, x)$

[9] $(-8\, x^2) \cdot (6\, x^2)$

[10] $(-x^2) \cdot (3\, x^2 + 5\, x)$

[11] $(2\, x^2) \cdot (-2\, x)$

[12] $(-x^2 + 4\, x) \cdot (-3\, x^2 - 3\, x)$

[13] $(x) \cdot (2\, x)$

[14] $(-5\, x) \cdot (-x^2 + 3\, x)$

[15] $(-4\, x^2 - 2\, x) \cdot (-4\, x^2 + 6\, x)$

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

[1] $(3\,x^3 + x^2) \cdot (-x^3 + 3\,x^2)$

[2] $(2\,x^3 - 2\,x^2) \cdot (2\,x^2 - 2\,x)$

[3] $(-x^3 + 4\,x) \cdot (3\,x^3 - 2\,x^2 - 4\,x)$

[4] $(-2\,x) \cdot (2\,x^3 - x^2 + 2\,x)$

[5] $(3\,x^3 + 4\,x^2) \cdot (-x^3 - 9\,x)$

[6] $(3\,x^2 + 2\,x) \cdot (-6\,x^3 - x)$

[7] $(5\,x^2 + 3\,x) \cdot (3\,x^3 - 2\,x^2 - 4\,x)$

[8] $(x^2 + 4\,x) \cdot (-2\,x^3 + 3\,x)$

[9] $(0) \cdot (3\,x^3 - 2\,x^2 + 2\,x)$

[10] $(-x) \cdot (-2\,x^3 + 3\,x^2 + 3\,x)$

[11] $(-x^2) \cdot (-4\,x^3 + x^2 - 5\,x)$

[12] $(2\,x^3) \cdot (2\,x^2 + 4\,x)$

[13] $(-6\,x^2 + 2\,x) \cdot (-3\,x^2 - 7\,x)$

[14] $(3\,x^2 + x) \cdot (-3\,x^3 + x^2)$

[15] $(2\,x^2 - 3\,x) \cdot (6\,x^2 + 6\,x)$

[16] $(3\,x^3 - 3\,x) \cdot (-2\,x^3 + 3\,x)$

[17] $(2\,x^3) \cdot (-3\,x^3 + 5\,x^2)$

[18] $(-x^3 + x^2) \cdot (x^3 - 3\,x)$

[19] $(7\,x^3 + 3\,x^2) \cdot (3\,x^3 + 4\,x)$

[20] $(-5\,x) \cdot (2\,x)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

[1] $(3\,x^2y - 4\,xy) \cdot (-x^2y^2 - x^2y)$

[2] $(3\,xy) \cdot (x^2y^2 - 4\,x^2y - 2\,xy^2)$

[3] $(-2\,x^2y + xy^2) \cdot (3\,x^2y^2 + 3\,x^2y + 3\,xy)$

[4] $(-2\,xy^2 - xy) \cdot (-4\,xy^2 + 5\,xy)$

[5] $(3\,x^2y - 2\,xy^2) \cdot (2\,x^2y - 3\,xy^2 + 3\,xy)$

[6] $(-x^2y - 4\,xy^2) \cdot (-4\,xy)$

[7] $(2\,xy^2) \cdot (3\,x^2y + 2\,xy)$