1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

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

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

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

[4] $\quad 8\,x^3 + 2\,x^6 - 4\,x^5 - x + 2\,x^6 + 4\,x^4 - 3\,x^3$

[5] $\quad -4\,x^5 + 4\,x^4 + 3\,x^3 + (-4\,x^5 - 3\,x^3) + (-x^5 + x^4)$

[6] $\quad 3\,x^4 + 3\,x^3 - 3\,x + 7\,x^6 + 4\,x^3 + -3\,x$

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $\quad 0 + 0 + 0$

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

[3] $\quad 10\,x^2y + 2\,xy^2 + -4\,x^2y^2 + 4\,x^2y + 16\,xy^2 + -6\,x^2y^2 + 6\,x^2y + 2\,xy^2$

[4] $\quad 6\,x^2y^2 + 45\,xy + -9\,x^2y^2 - 36\,x^2y + (-54\,xy^2)$

[5] $\quad 24\,xy + -44\,x^2y^2 - 4\,xy^2 + -12\,x^2y - 64\,xy^2 + 48\,xy$

[6] $\quad -10\,x^2y^2 + 30\,xy^2 + (-65\,x^2y^2 - 75\,x^2y) + (-25\,x^2y^2 + 15\,x^2y + 10\,xy^2)$

[7] $\quad -108\,x^2y^2 - 6\,x^2y - 108\,xy + (-144\,x^2y^2 + 18\,x^2y + 108\,xy^2) + (-36\,x^2y^2 + 24\,x^2y - 36\,xy^2)$

[8] $\quad 49\,x^2y + 224\,x^2y^2 + 7\,xy^2 + 14\,x^2y^2 - 175\,xy^2$

[9] $\quad -24\,x^2y - 8\,xy + (-192\,xy^2 - 8\,xy) + (-192\,x^2y^2)$

[10] $\quad 81\,x^2y^2 - 9\,x^2y - 81\,xy^2 + -153\,x^2y + 81\,xy^2 + -324\,x^2y + 567\,xy$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

[3] $\quad 6\,x^2y^2 + 4\,x^2y - 4\,xy + -8\,x^2y^2 - 4\,x^2y + 16\,xy - (-8\,x^2y^2 - 6\,xy)$

[4] $\quad 36\,x^2y^2 - 9\,x^2y - 12\,xy^2 - (18\,x^2y + 18\,xy^2 - 6\,xy) + (-9\,x^2y^2 - 24\,x^2y)$

[5] $\quad -32\,x^2y^2 - 12\,xy^2 + 48\,x^2y^2 + 8\,xy^2 - 12\,xy - (-32\,xy^2 + 36\,xy)$

[6] $\quad 20\,x^2y^2 - 10\,x^2y - 100\,xy + -10\,x^2y + 15\,xy^2 - 15\,xy - (-5\,x^2y^2 + 5\,xy^2 - 50\,xy)$

[7] $\quad -108\,x^2y - 6\,xy^2 - (-36\,x^2y^2 + 6\,xy^2 + 12\,xy) + (-72\,x^2y^2 + 144\,x^2y - 36\,xy^2)$

[8] $\quad -98\,x^2y^2 + 175\,x^2y + 119\,x^2y + 7\,xy - (-147\,x^2y^2 - 147\,xy)$

[9] $\quad 8\,x^2y^2 - 32\,xy + 64\,x^2y^2 + 8\,x^2y + 128\,xy^2 - (224\,x^2y^2 + 128\,xy^2)$

[10] $\quad 18\,xy - (-9\,x^2y^2 - 18\,x^2y + 27\,xy^2) + (-54\,x^2y + 81\,xy)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

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

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

[3] $(-4\,b^3x^2yz^2) \cdot (-16\,b^3x^3y^2z^3)$

[4] $(-54\,bx^3y^3z^2) \cdot (9\,bxy^2z^2)$

[5] $(-256\,b^2x^3yz^3) \cdot (-64\,b^2x^3y^3z^3)$

[6] $(50\,bx^2y^2z) \cdot (-25\,bx^3y^2z^2)$

[7] $(108\,bx^3y^3z^2) \cdot (216\,bx^3yz)$

[8] $(14\,b^2x^3y^3z) \cdot (-196\,bx^2yz^2)$

[9] $(1536\,b^3xyz^2) \cdot (-1024\,b^2xy^2z^3)$

[10] $(1458\,b^3x^3y^3z) \cdot (18\,bx^2yz^2)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

[1] $(3\,x^2) \cdot (x^2 - 6\,x)$

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

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

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

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

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

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

[8] $(4\,x) \cdot (7\,x^2)$

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

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

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

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

[10] $(6\,x^2) \cdot (-8\,x^2)$

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

[12] $(-7\,x) \cdot (-3\,x^2 + 3\,x)$

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

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

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

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

[9] $(4x) \cdot (-8x^2 + 2x)$

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

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

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

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

[14] $(3x) \cdot (-9x^3 + x)$

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

[16] $(-4x^3 - 6x^2) \cdot (4x^2)$

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

[18] $(4x^3) \cdot (x^3 - 3x^2 - 3x)$

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

[20] $(8x^3) \cdot (-2x^3 + 2x^2 + x)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

[1] $(4x^2y + 4xy) \cdot (4x^2y^2 - 5xy)$

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

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

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

[5] $(3x^2y + 3xy) \cdot (-3x^2y^2 + 4xy^2 - 3xy)$

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

[7] $(-xy^2 - 2xy) \cdot (-2x^2y^2 - x^2y + 4xy)$