1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

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

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

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

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

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

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

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

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

[3] $-8\,x^2y - 8\,xy^2 + 6\,xy + (-2\,x^2y^2 + 12\,x^2y + 16\,xy) + (-10\,xy^2 + 4\,xy)$

[4] $3\,x^2y^2 + 36\,xy^2 + 18\,xy + -18\,x^2y^2 - 27\,xy + 9\,x^2y - 18\,xy$

[5] $64\,x^2y^2 - 16\,xy^2 - 16\,xy + -48\,x^2y - 16\,xy^2 + 48\,xy + 32\,x^2y - 64\,xy^2 + 16\,xy$

[6] $25\,x^2y + 10\,xy + 75\,x^2y + 30\,xy + 70\,x^2y^2 - 5\,x^2y$

[7] $72\,x^2y^2 - 36\,xy^2 - 12\,xy + -120\,x^2y^2 - 18\,xy + -36\,x^2y^2 + 108\,xy^2 - 12\,xy$

[8] $98\,x^2y^2 - 21\,x^2y + -7\,xy + -7\,x^2y - 196\,xy^2 + 14\,xy$

[9] $128\,x^2y^2 - 64\,xy^2 + 16\,xy + 256\,x^2y^2 + 128\,xy^2 - 256\,xy + 128\,x^2y^2 + 128\,xy^2 - 64\,xy$

[10] $-144\,xy + (-252\,x^2y^2 - 243\,xy) + (-27\,x^2y + 18\,xy^2 + 9\,xy)$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

[3] $4\,xy^2 + 20\,xy + 10\,x^2y - 8\,xy^2 - (-18\,x^2y^2 + 12\,x^2y)$

[4] $-27\,xy^2 + 12\,xy - (33\,x^2y^2 + 27\,xy^2) + (3\,x^2y - 36\,xy^2 - 27\,xy)$

[5] $12\,x^2y - 96\,xy^2 + 4\,xy^2 - 16\,xy - (32\,x^2y^2 + 28\,xy)$

[6] $25\,xy^2 - 70\,xy + -50\,xy^2 - (-15\,x^2y^2 + 20\,x^2y + 25\,xy)$

[7] $-96\,x^2y^2 - 24\,xy - (-18\,xy^2 - 108\,xy) + (30\,xy^2 + 6\,xy)$

[8] $-21\,x^2y - 147\,xy^2 - 7\,xy + 196\,xy^2 + 14\,xy - (147\,x^2y^2 + 21\,x^2y - 196\,xy^2)$

[9] $224\,x^2y + 128\,x^2y - 16\,xy^2 - (8\,xy^2 - 64\,xy)$

[10] $9\,x^2y^2 - 243\,x^2y - 36\,xy - (-162\,x^2y^2 + 162\,xy^2 - 9\,xy) + (-9\,x^2y - 261\,xy^2)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

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

[2] $(-bx^3yz) \cdot (3\,b^2xy^3z^3)$

[3] $(6\,b^3xyz^3) \cdot (8\,b^2x^3y^2z^2)$

[4] $(-9\,b^3x^3y^2z^2) \cdot (27\,b^2x^2y^3z^2)$

[5] $(64\,b^2xy^3z^3) \cdot (48\,bx^3y^3z)$

[6] $(-25\,bx^2y^2z^2) \cdot (20\,b^3x^3yz)$

[7] $(648\,b^3x^2y^2z^3) \cdot (36\,bx^3y^3z)$

[8] $(49\,b^3xyz^2) \cdot (-28\,b^3xy^3z)$

[9] $(-8\,b^2x^3y^2z^2) \cdot (-512\,bx^2y^2z^3)$

[10] $(-18\,b^3xyz^3) \cdot (2916\,b^2x^2y^3z^3)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

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

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

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

[8] $(-4\,x^2 + 4\,x) \cdot (-4\,x^2 - 5\,x)$

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

[10] $(-2\,x) \cdot (x^2 + 4\,x)$

[11] $(-2\,x) \cdot (-8\,x^2 - x)$

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

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

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

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

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

[1] $(-7\,x^3 + x) \cdot (-x^3 - x)$

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

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

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

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

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

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

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

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

[10] $(-7\,x^3 + 4\,x) \cdot (4\,x)$

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

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

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

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

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

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

[17] $(3\,x^2 + x) \cdot (-4\,x^2)$

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

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

[20] $(-2\,x^3 + 3\,x) \cdot (-5\,x^3 + x^2)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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