1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

[1] $2\,x^6 + -5\,x^5 + 2\,x + 2\,x^6 - 4\,x^3 - 3\,x^2$

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

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

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

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

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

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

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

[3] $6\,xy^2 + 12\,xy + 18\,xy^2 + -8\,x^2y^2 - 2\,xy^2 - 4\,xy$

[4] $9\,x^2y^2 + 12\,x^2y + 27\,xy^2 + -12\,x^2y^2 + 9\,x^2y - 27\,xy^2 + 12\,x^2y - 18\,xy$

[5] $76\,x^2y + 96\,x^2y^2 + 16\,x^2y - 16\,xy^2 + 48\,xy$

[6] $95\,x^2y - 15\,xy^2 + 25\,x^2y^2 + 75\,xy^2 - 10\,xy + 10\,x^2y^2 - 10\,x^2y - 50\,xy^2$

[7] $144\,xy^2 + 12\,x^2y^2 + 6\,xy + -72\,x^2y - 12\,xy^2 + 144\,xy$

[8] $49\,x^2y^2 + 98\,xy^2 - 14\,xy + -49\,x^2y^2 + 147\,x^2y - 49\,xy^2 + -14\,x^2y + 210\,xy^2$

[9] $128\,x^2y^2 + 32\,x^2y + 64\,xy + -448\,x^2y^2 + 192\,x^2y + (-128\,x^2y)$

[10] $324\,x^2y + 9\,xy^2 - 27\,xy + -324\,x^2y^2 + 9\,x^2y + -180\,xy$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

[3] $2\,x^2y^2 - 12\,xy + -14\,x^2y^2 - (8\,x^2y^2 - 6\,xy)$

[4] $9\,x^2y^2 - 48\,x^2y - (27\,x^2y^2 + 12\,xy^2 - 9\,xy) + (-3\,x^2y^2 - 12\,x^2y - 9\,xy)$

[5] $-4\,x^2y - 48\,xy^2 + 48\,xy + -8\,xy^2 + 48\,xy - (-8\,x^2y^2 + 64\,xy^2 - 32\,xy)$

[6] $-15\,x^2y^2 + 5\,x^2y^2 + 20\,xy^2 - 50\,xy - (-100\,xy^2 + 35\,xy)$

[7] $108\,x^2y^2 + 18\,xy^2 - 108\,xy - (162\,x^2y + 36\,xy) + (-72\,xy^2 + 18\,xy)$

[8] $294\,x^2y - 98\,xy + 147\,x^2y^2 - 14\,x^2y + 98\,xy - (35\,x^2y - 196\,xy)$

[9] $32\,x^2y^2 - 8\,xy^2 - 24\,xy + -96\,x^2y^2 - 192\,xy - (-24\,x^2y^2 + 8\,xy^2)$

[10] $-243\,x^2y^2 - 27\,xy^2 - 81\,xy - (45\,x^2y - 81\,xy^2) + (-324\,x^2y + 207\,xy)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

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

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

[3] $(-8\,bxyz^3) \cdot (-24\,bx^2y^3z^2)$

[4] $(36\,bxyz^2) \cdot (36\,b^2xy^2z)$

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

[6] $(15\,bx^2y^2z^2) \cdot (375\,b^2xyz^3)$

[7] $(-72\,b^2xyz^3) \cdot (-648\,bx^3y^3z^3)$

[8] $(1029\,b^3xy^3z^2) \cdot (-147\,bxy^3z^3)$

[9] $(-8\,b^2x^3y^3z) \cdot (24\,bx^2y^3z^2)$

[10] $(81\,b^3xy^2z) \cdot (27\,bx^3yz^3)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

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

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

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

[1] $(-7\,x^2) \cdot (-3\,x)$

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

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

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

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

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

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

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

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

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

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

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

[13] $(-5\,x) \cdot (-x^2 - x)$

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

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

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

[8] $(-3\,x^3 + x) \cdot (-5\,x^3 - x)$

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

[10] $(-4\,x^2 + 4\,x) \cdot (2\,x^3 - 3\,x^2)$

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

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

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

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

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

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

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

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

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

[20] $(-2\,x^2 + 3\,x) \cdot (-3\,x^3 + 10\,x^2)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

[1] $(-2\,x^2y + xy) \cdot (2\,x^2y^2 - 7\,x^2y)$

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

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

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

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

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

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