1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

[1] $4\,x^4 + 5\,x^3 + -7\,x^5 - 3\,x + -x^6 + x^5 - 3\,x^4$
[2] $4\,x^6 + x^3 + -3\,x^6 - x^4 + 2\,x^3 + -3\,x^4 + 7\,x^3$
[3] $4\,x^3 + 5\,x^2 + x^6 - 4\,x^2 - 3\,x + -x^2$
[4] $6\,x^4 - x^3 + -4\,x^3 - x^2 - x + (-3\,x^6 - 2\,x^4 - 3\,x)$
[5] $4\,x^6 + 3\,x^3 - x^2 + -2\,x^6 + x^5 + 2\,x^4 + -2\,x^6 - 2\,x^2 - 4\,x$
[6] $3\,x^5 - 2\,x^3 - 4\,x^2 + 3\,x^6 - 2\,x^5 + 2\,x^2 + -3\,x^3 + 2\,x$
[7] $3\,x^3 - x^2 - 2\,x + -2\,x^6 - 2\,x^3 - 4\,x^2 + 4\,x^6 + x^4$
[8] $4\,x^6 + x^4 + 3\,x^6 - x^2 + -2\,x^6 + 3\,x^5 + x$
[9] $3\,x^3 - 3\,x^2 - 2\,x + -2\,x^5 + 4\,x^4 - 3\,x^2 + -4\,x^6 + 3\,x^4 - 4\,x$
[10] $x^6 - 4\,x^2 + 4\,x + -4\,x^5 - 4\,x^4 - 3\,x^2 + x^4 - 3\,x$

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$
[2] $7\,x^2y - 2\,xy^2 + 3\,x^2y^2 - 4\,xy^2 + xy + 2\,x^2y^2 + 3\,xy^2 - 4\,xy$
[3] $4\,xy^2 - 14\,xy + -10\,xy^2 + 8\,xy + 16\,xy^2$
[4] $15\,x^2y^2 - 3\,x^2y + 15\,x^2y^2 - 12\,xy^2 + 27\,x^2y^2 + 6\,xy^2 - 12\,xy$
[5] $-76\,x^2y^2 + 4\,xy + (-16\,x^2y^2 - 8\,x^2y + 48\,xy) + (-56\,x^2y^2)$
[6] $10\,x^2y^2 + 75\,x^2y - 50\,xy + -100\,x^2y - 50\,xy + 90\,x^2y^2 + 5\,x^2y$
[7] $6\,x^2y^2 - 144\,x^2y - 6\,xy + -6\,x^2y + 42\,xy^2 + 90\,xy^2 - 144\,xy$
[8] $196\,x^2y^2 - 21\,x^2y + 49\,xy^2 + -105\,x^2y - 21\,xy + -168\,x^2y + 49\,xy^2$
[9] $8\,x^2y^2 - 128\,xy + 24\,x^2y^2 - 272\,xy + 64\,x^2y^2 + 8\,x^2y - 8\,xy^2$
[10] $-324\,x^2y + 81\,xy + (-243\,xy) + (-333\,x^2y + 243\,xy^2)$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

[1] $0 - (0) + (0)$
[2] $-2\,x^2y^2 + x^2y - 4\,xy^2 + x^2y^2 + 4\,x^2y - (x^2y^2 - 3\,xy^2 + xy)$
[3] $8\,x^2y - 10\,xy^2 + -16\,x^2y^2 + 16\,x^2y - 16\,xy^2 - (-6\,x^2y^2 + 2\,x^2y - 8\,xy)$
[4] $-24\,x^2y - 6\,xy^2 - (-6\,x^2y - 15\,xy^2) + (3\,x^2y^2 + 9\,xy^2)$
[5] $64\,x^2y + 12\,xy + -4\,x^2y + 16\,xy - (16\,x^2y^2 + 24\,xy)$
[6] $-10\,x^2y + 50\,xy^2 - 25\,xy + -50\,xy^2 - 50\,xy - (25\,x^2y - 25\,xy^2)$
[7] $120\,x^2y^2 + 18\,xy^2 - (-90\,x^2y - 24\,xy^2) + (-18\,x^2y^2 + 12\,xy)$
[8] $28\,x^2y - 168\,xy^2 + 14\,x^2y^2 + 105\,x^2y - (7\,x^2y^2 - 196\,x^2y + 147\,xy^2)$
[9] $16\,x^2y^2 - 128\,xy^2 + 64\,xy + 40\,x^2y^2 - 64\,xy^2 - (-8\,x^2y^2 - 128\,xy^2 + 64\,xy)$
[10] $81\,x^2y^2 - 324\,x^2y - 36\,xy^2 - (18\,x^2y^2 + 243\,xy) + (-162\,x^2y^2 - 36\,xy^2 - 27\,xy)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

[1] $(0) \cdot (0)$
[2] $(-bx^2y^3z^2) \cdot (3\,b^3x^2y^3z^2)$
[3] $(-24\,b^2x^3y^2z^3) \cdot (-4\,b^2x^3yz^3)$
[4] $(12\,b^2xy^3z^2) \cdot (27\,b^3x^3yz^2)$
[5] $(16\,bxyz^2) \cdot (128\,b^3x^3y^3z^3)$
[6] $(-75\,b^3xy^3z) \cdot (10\,b^2x^3y^3z^2)$
[7] $(-108\,bxy^3z^2) \cdot (-12\,b^3x^3y^2z^3)$
[8] $(1029\,b^2x^2y^3z) \cdot (-147\,bx^2y^2z)$
[9] $(32\,b^3xy^2z^2) \cdot (-1024\,b^2x^3y^2z^2)$
[10] $(-2187\,b^2xy^2z^3) \cdot (-1458\,b^3x^3yz^2)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

[1] $(-2\,x) \cdot (-3\,x^2 + 5\,x)$
[2] $(3\,x^2) \cdot (5\,x^2 - x)$
[3] $(-4\,x) \cdot (-x^2 + 3\,x)$
[4] $(3\,x) \cdot (6\,x^2 + 4\,x)$
[5] $(4\,x^2) \cdot (-3\,x^2)$
[6] $(-x^2) \cdot (-5\,x^2 - x)$
[7] $(-2\,x^2) \cdot (7\,x^2 - 3\,x)$
[8] $(x) \cdot (-2\,x^2 + 4\,x)$
[9] $(4\,x^2) \cdot (-8\,x)$
[10] $(3\,x) \cdot (x^2 + 2\,x)$

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

[1] $(0) \cdot (4\,x^2)$
[2] $(-2\,x) \cdot (2\,x^2)$
[3] $(4\,x^2 + x) \cdot (-8\,x^2 + 4\,x)$
[4] $(7\,x^2) \cdot (2\,x^2)$
[5] $(4\,x^2 - 2\,x) \cdot (3\,x)$
[6] $(-x^2 - 4\,x) \cdot (-5\,x)$
[7] $(-2\,x^2 + 3\,x) \cdot (-2\,x^2 - 4\,x)$
[8] $(2\,x^2) \cdot (2\,x^2 - x)$
[9] $(4\,x^2 - 2\,x) \cdot (5\,x^2 + 4\,x)$
[10] $(5\,x) \cdot (-5\,x)$
[11] $(-4\,x) \cdot (2\,x^2 - 4\,x)$
[12] $(0) \cdot (-x^2)$
[13] $(3\,x^2 + 4\,x) \cdot (-x^2 - 3\,x)$
[14] $(2\,x^2 + x) \cdot (-5\,x^2 + x)$
[15] $(2\,x^2) \cdot (0)$

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

[1] $(-x^3 + 6\,x) \cdot (-3\,x^2)$
[2] $(-3\,x^3 - 3\,x^2) \cdot (-x^3 - 4\,x^2 - 3\,x)$
[3] $(3\,x^2 + 4\,x) \cdot (4\,x)$
[4] $(4\,x^3 - 4\,x) \cdot (x^3 + x)$
[5] $(4\,x^3 - 2\,x) \cdot (3\,x^2 - 3\,x)$
[6] $(-x^2 + 2\,x) \cdot (-4\,x^3 + 3\,x^2)$
[7] $(4\,x^3 + 5\,x) \cdot (-4\,x^2 - 2\,x)$
[8] $(4\,x^3 + 2\,x) \cdot (5\,x^2 - 3\,x)$
[9] $(4\,x^3 + 2\,x) \cdot (2\,x^3 - 2\,x)$
[10] $(-2\,x^3 - x^2) \cdot (-7\,x^3 + 4\,x^2)$
[11] $(2\,x^3 - 4\,x) \cdot (4\,x^3 + 2\,x^2)$
[12] $(-4\,x) \cdot (2\,x^3 + 5\,x^2)$
[13] $(-x) \cdot (-2\,x^3 + 3\,x^2 - 3\,x)$
[14] $(-2\,x^3 - 2\,x) \cdot (-6\,x^3 - 8\,x^2)$
[15] $(-x^3) \cdot (2\,x^2)$
[16] $(-2\,x^3 + 2\,x^2) \cdot (-2\,x^3 + x)$
[17] $(-4\,x^2 - 4\,x) \cdot (-2\,x^3 - 2\,x^2 + 4\,x)$
[18] $(-2\,x^3 - 4\,x) \cdot (2\,x^2 + 4\,x)$
[19] $(7\,x^3 + 4\,x) \cdot (2\,x)$
[20] $(2\,x^3 - 2\,x^2) \cdot (x^2 - x)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

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