1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

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

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

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

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

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

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

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

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

[3] $10\,x^2y - 2\,xy + -4\,x^2y^2 + 8\,x^2y + 24\,x^2y^2 - 16\,xy$

[4] $18\,x^2y + 3\,xy^2 + -12\,x^2y^2 + 18\,xy^2 - 18\,xy + 18\,x^2y - 9\,xy^2 - 12\,xy$

[5] $4\,x^2y^2 + 8\,x^2y + 16\,xy^2 + 32\,x^2y^2 - 16\,xy^2 + -8\,x^2y^2 - 12\,x^2y - 64\,xy$

[6] $20\,x^2y^2 + 25\,x^2y - 50\,xy + 20\,x^2y^2 - 20\,xy^2 + 15\,xy + -20\,x^2y^2 + 50\,x^2y + 75\,xy$

[7] $144\,x^2y^2 + -36\,x^2y - 12\,xy + 72\,x^2y^2 - 18\,x^2y + 36\,xy^2$

[8] $196\,x^2y^2 + 21\,x^2y + 98\,xy^2 + -21\,x^2y^2 - 14\,xy^2 + (-175\,x^2y^2 - 147\,xy^2)$

[9] $16\,x^2y + 128\,xy^2 + 256\,xy + 64\,x^2y + 8\,xy^2 + 16\,xy + 16\,x^2y + 24\,xy^2$

[10] $81\,x^2y^2 - 342\,xy^2 + 405\,x^2y + 81\,xy + -324\,x^2y^2 + 36\,xy^2 - 243\,xy$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

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

[4] $-9\,x^2y^2 + 12\,xy^2 + 6\,xy - (18\,x^2y^2 + 27\,xy) + (-6\,x^2y^2 + 9\,xy^2 + 9\,xy)$

[5] $-12\,x^2y - 16\,xy + -32\,x^2y^2 + 16\,xy^2 - 8\,xy - (12\,x^2y^2 - 12\,xy^2)$

[6] $35\,xy^2 + 50\,xy + 10\,x^2y^2 - 10\,xy^2 + 25\,xy - (5\,x^2y - 100\,xy)$

[7] $-252\,x^2y^2 - 108\,x^2y - (72\,x^2y^2 + 36\,x^2y + 144\,xy^2) + (-12\,x^2y^2 + 108\,xy^2 - 12\,xy)$

[8] $-14\,x^2y + 49\,xy^2 - 21\,xy + -49\,x^2y + 21\,xy - (-98\,x^2y^2 - 7\,xy^2)$

[9] $16\,x^2y^2 - 24\,x^2y - 32\,xy^2 + -256\,xy^2 + 184\,xy - (-192\,x^2y^2 + 8\,x^2y + 64\,xy^2)$

[10] $108\,x^2y^2 + 324\,x^2y - (-423\,x^2y^2) + (-324\,xy^2)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

[1] $(0) \cdot (0)$
[2] $(2\,b^2x^3y^3z^2) \cdot (4\,bxy^2z)$
[3] $(-16\,bxyz) \cdot (-16\,b^3xyz^2)$
[4] $(6\,bx^2y^2z^2) \cdot (-81\,bx^2yz^2)$
[5] $(4\,b^2xy^3z) \cdot (-16\,bxy^2z)$
[6] $(100\,bx^3yz^3) \cdot (50\,bx^2y^2z^2)$
[7] $(864\,b^3x^2y^3z^2) \cdot (6\,b^2x^2yz)$
[8] $(147\,b^2x^2yz^2) \cdot (-1372\,b^2x^2y^2z^2)$
[9] $(-2048\,bxy^3z^2) \cdot (-192\,b^3xyz)$
[10] $(-2916\,bx^2y^2z^2) \cdot (-243\,bx^2y^3z^2)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

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