1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

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

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

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

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

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

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

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

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

[3] $8\,xy^2 + 4\,xy + -28\,xy^2 + (-2\,xy^2 + 4\,xy)$

[4] $24\,x^2y^2 + 9\,x^2y + 3\,x^2y - 12\,xy^2 + -30\,xy^2$

[5] $64\,x^2y^2 + 16\,x^2y + 48\,xy + -12\,x^2y^2 + 48\,xy + (-64\,x^2y^2 + 12\,x^2y - 8\,xy)$

[6] $5\,x^2y^2 - 50\,xy^2 + -5\,xy^2 - 65\,xy + (-175\,x^2y + 100\,xy^2)$

[7] $12\,x^2y^2 + 6\,x^2y - 144\,xy + -18\,xy^2 + 30\,xy + (-54\,x^2y - 108\,xy)$

[8] $98\,x^2y^2 - 21\,xy^2 - 14\,xy + 28\,x^2y^2 - 245\,xy + -98\,x^2y^2 + 14\,xy^2 - 147\,xy$

[9] $40\,x^2y^2 - 128\,xy + 56\,x^2y^2 - 16\,x^2y + -16\,x^2y^2 - 32\,xy^2$

[10] $-405\,x^2y^2 - 243\,xy^2 + (-567\,x^2y^2 - 18\,x^2y) + (-324\,x^2y - 243\,xy^2 + 324\,xy)$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

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

[4] $-6\,x^2y + 24\,xy - (-6\,x^2y - 24\,xy^2) + (12\,x^2y - 48\,xy^2)$

[5] $16\,x^2y^2 - 16\,x^2y + 48\,xy + -48\,x^2y + 96\,xy - (16\,x^2y^2 + 16\,x^2y - 4\,xy^2)$

[6] $75\,x^2y^2 + -75\,x^2y + 95\,xy - (-50\,x^2y + 70\,xy)$

[7] $18\,x^2y^2 - 144\,x^2y - 72\,xy^2 - (6\,x^2y^2 + 24\,xy^2 - 108\,xy) + (90\,x^2y^2 - 24\,xy)$

[8] $-98\,x^2y^2 + 42\,xy^2 + -21\,x^2y + 49\,xy - (-196\,x^2y^2 + 98\,x^2y - 49\,xy^2)$

[9] $128\,xy^2 + 16\,xy + -192\,x^2y^2 - 64\,x^2y + 32\,xy - (8\,x^2y^2 + 192\,xy^2)$

[10] $-162\,x^2y^2 - 162\,xy^2 + 81\,xy - (36\,x^2y - 27\,xy^2 - 81\,xy) + (-243\,x^2y^2 + 36\,x^2y - 27\,xy^2)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

[1] $(0) \cdot (0)$
[2] $(4\,b^3xy^3z^3) \cdot (b^3x^2y^2z^3)$
[3] $(8\,b^3x^3y^2z^3) \cdot (-8\,b^3x^3yz)$
[4] $(-18\,b^2x^2y^2z) \cdot (108\,b^3x^2y^3z^3)$
[5] $(16\,bx^3yz^2) \cdot (-16\,bx^3yz^2)$
[6] $(-250\,b^3x^3y^2z) \cdot (25\,b^3x^3y^3z^3)$
[7] $(432\,bx^3y^3z^3) \cdot (18\,b^2x^2y^3z^2)$
[8] $(-28\,bx^2yz^2) \cdot (686\,b^3x^2y^3z^3)$
[9] $(24\,b^2xyz^2) \cdot (-2048\,b^3x^2y^2z^3)$
[10] $(2187\,bxy^2z^2) \cdot (2187\,b^2xyz^2)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

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

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

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