1. Ejercicios para practicar

Nombre:

Realiza las siguientes operaciones

Ejercicio 1: Realiza las siguientes sumas de polinomios:

[1] $4\,x^2 - 5\,x + -3\,x^6 - 2\,x^4 + 4\,x + -7\,x^2 - 2\,x$

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

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

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

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

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

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

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

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

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

Ejercicio 2: Realiza las siguientes sumas de polinomios:

[1] $0 + 0 + 0$

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

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

[4] $21\,x^2y^2 + -18\,x^2y^2 + 12\,x^2y + 9\,xy^2 + 6\,xy$

[5] $48\,x^2y^2 - 64\,x^2y + 12\,xy + -64\,xy^2 + 60\,xy + -16\,x^2y^2 + 12\,x^2y - 16\,xy$

[6] $15\,x^2y^2 - 20\,x^2y + 15\,xy^2 + -20\,x^2y^2 - 75\,x^2y - 100\,xy + (-50\,x^2y^2 - 45\,xy)$

[7] $138\,x^2y^2 + 36\,xy + -108\,x^2y^2 - 36\,x^2y + 6\,xy + 72\,x^2y$

[8] $147\,xy^2 - 126\,xy + 147\,x^2y^2 + 196\,x^2y - 196\,xy + -147\,x^2y^2 + 28\,xy^2 + 28\,xy$

[9] $24\,x^2y^2 + 128\,xy^2 + 192\,xy + -8\,x^2y^2 + -192\,x^2y + 32\,xy^2$

[10] $-63\,x^2y^2 + 162\,xy + (-162\,x^2y^2 + 27\,xy^2 - 324\,xy) + (-27\,x^2y^2 + 27\,x^2y - 27\,xy)$

Ejerciio 3 Realiza las siguientes sumas y restas de polinomios:

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

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

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

[4] $36\,x^2y - 6\,xy^2 + 9\,xy - (-18\,x^2y^2) + (9\,x^2y^2 + 27\,x^2y + 12\,xy)$

[5] $16\,x^2y^2 + 12\,xy^2 + 16\,xy + 36\,x^2y^2 + 32\,x^2y - (-44\,x^2y + 32\,xy^2)$

[6] $5\,x^2y + 5\,x^2y^2 - 5\,x^2y - 15\,xy^2 - (-25\,x^2y - 125\,xy^2)$

[7] $36\,x^2y^2 + 144\,xy - (144\,x^2y^2 - 36\,xy^2 + 24\,xy) + (18\,x^2y + 6\,xy^2 - 72\,xy)$

[8] $-7\,x^2y^2 - 49\,xy^2 - 147\,xy + 49\,x^2y^2 - 7\,x^2y - (-126\,x^2y + 14\,xy)$

[9] $64\,x^2y^2 - 16\,xy^2 + -8\,x^2y^2 + 128\,x^2y + 256\,xy^2 - (48\,x^2y + 24\,xy^2)$

[10] $-18\,x^2y^2 + 81\,x^2y + 18\,xy^2 - (9\,x^2y - 216\,xy^2) + (36\,x^2y^2 + 81\,xy^2 - 81\,xy)$

Ejercicio 3: Realiza las siguientes multiplicaciones de monomios:

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

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

[3] $(-12\, b^2 xyz^3) \cdot (-24\, b^3 x^2 y^2 z^2)$

[4] $(-9\, bx^3 y^3 z^2) \cdot (81\, bx^2 y^2 z^2)$

[5] $(-64\, b^3 x^3 y^2 z^3) \cdot (-4\, b^2 x^3 yz^3)$

[6] $(5\, b^3 x^2 y^2 z^3) \cdot (125\, bx^2 y^2 z^3)$

[7] $(864\, b^2 x^3 yz^2) \cdot (24\, b^2 xyz)$

[8] $(-21\, bx^2 y^3 z^3) \cdot (-28\, b^3 x^2 y^2 z^2)$

[9] $(16\, bx^3 y^3 z) \cdot (-24\, b^2 x^3 y^3 z^3)$

[10] $(-243\, bxy^3 z) \cdot (-2187\, b^2 x^2 yz^3)$

Ejercicio 4: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

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

[10] $(4\, x^2) \cdot (-5\, x^2 - 7\, x)$

Ejercicio 5: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

[4] $(x) \cdot (4\, x)$

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

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

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

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

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

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

[11] $(-3\, x^2 + 3\, x) \cdot (2\, x^2 + 5\, x)$

[12] $(2\, x^2 - 3\, x) \cdot (-7\, x^2)$

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

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

[15] $(2\, x^2 + x) \cdot (-4\, x^2 + 7\, x)$

Ejercicio 6: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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

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

[9] $(6\,x^3) \cdot (-2\,x^3 + 7\,x^2)$

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

[11] $(4\,x) \cdot (6\,x^3 + 4\,x^2 - 4\,x)$

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

[13] $(-4\,x^2) \cdot (8\,x^3 + 2\,x)$

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

[15] $(-4\,x^2 + 4\,x) \cdot (-x^3 + 2\,x^2)$

[16] $(-2\,x^3 - 4\,x^2) \cdot (3\,x^2 + 7\,x)$

[17] $(-3\,x^3) \cdot (x^3 + 7\,x^2 + 2\,x)$

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

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

[20] $(4\,x^3 + 3\,x) \cdot (-2\,x^3 + 2\,x^2 + x)$

Ejercicio 7: Realiza las siguientes multiplicaciones de polinomios:

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

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

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

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

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

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

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