

Matemáticas

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Plataforma

$$1) (a^2 - b^3)^5 =$$

$$\begin{array}{ccccccc} & & & & & & 1 \\ & & & & & 1 & 1 \\ & & & & 1 & 2 & 1 \\ & & 1 & 3 & 3 & 1 \\ & 1 & 4 & 6 & 4 & 1 \\ 1 & 5 & 10 & 10 & 5 & 1 \end{array}$$

$$1(a^2)^5 - 5(a^2)^4(b^3)^1 + 10(a^2)^3(b^3)^2 - 10(a^2)^2(b^3)^3 + 5(a^2)^1(b^3)^4 - 1(b^3)^5$$

$$1(a^{10}) - 5(a^8)(b^3) + 10(a^6)(b^6) - 10(a^4)(b^9) + 5(a^2)(b^{12}) - 1(b^{15})$$

$$1a^{10} - 5a^8b^3 + 10a^6b^6 - 10a^4b^9 + 5a^2b^{12} - 1b^{15}$$

$$2) (m^3 + 2n^4)^7$$

$$\begin{array}{ccccccc} & & & & & & 1 \\ & & & & & 1 & 1 \\ & & & & 1 & 2 & 1 \\ & & 1 & 3 & 3 & 1 \\ & 1 & 4 & 6 & 4 & 1 \\ 1 & 5 & 10 & 10 & 5 & 1 \\ & & & & & & 1 & 6 & 15 & 20 & 15 & 6 & 1 \\ & & & & & & 1 & 7 & 21 & 35 & 35 & 21 & 7 & 1 \end{array}$$

$$1(m^3)^7 + 7(m^3)^6(2n^4)^1 + 21(m^3)^5(2n^4)^2 + 35(m^3)^4(2n^4)^3 + 35(m^3)^3(2n^4)^4 + 21(m^3)^2(2n^4)^5 + 7(m^3)^1(2n^4)^6 + 1(2n^4)^7$$

$$1(m^{21}) + 7(m^{18})(2n^4) + 21(m^{15})(4n^8) + 35(m^{12})(8n^{12}) + 35(m^9)(16n^{16}) + 21(m^6)(32n^{20}) + 7(m^3)(64n^{24}) + 1(128n^{28})$$

$$1m^{21} + 14m^{18}n^4 + 84m^{15}n^8 + 280m^{12}n^{12} + 560m^9n^{16} + \dots$$

$$+ 672 m^6 n^{26} + 448 m^8 n^{24} + 128 n^{28}$$

$$3. (3x - 2y)^4$$

$$1(3x)^4 - 4(3x)^3(2y)^1 + 6(3x)^2(2y)^2 - 4(3x)^1(2y)^3 + 1(2y)^4$$

$$\begin{array}{ccccccc} & & & & & & 1 \\ & & & & & 1 & 1 \\ & & & & 1 & 2 & 1 \\ & & 1 & 3 & 3 & 1 \\ 1 & 4 & 6 & 4 & 1 \end{array}$$

$$1(81x^4) - 4(27x^3)(2y^1) + 6(9x^2)(4y^2) - 4(3x^1)(8y^3) + 1(16y^4)$$

$$81x^4 - 216x^3y^1 + 216x^2y^2 - 96x^1y^3 + 16y^4$$

$$4. (5m - 2n)^5$$

$$1(5m)^5 - 5(5m)^4(2n)^1 + 10(5m)^3(2n)^2 - 10(5m)^2(2n)^3 + 5(5m)^1(2n)^4 - 1(2n)^5$$

$$\begin{array}{ccccccc} & & & & & & 1 \\ & & & & & 1 & 1 \\ & & & & 1 & 2 & 1 \\ & & 1 & 3 & 3 & 1 \\ 1 & 4 & 6 & 4 & 1 \\ 1 & 5 & 10 & 10 & 5 & 1 \end{array}$$

$$1(3,125m^5) - 5(6,25m^4)(2n^1) + 10(125m^3)(4n^2) - 10(25m^2)(8n^3) + 5(5m^1)(16n^4) - 1(32n^5)$$

$$5. (2x^3 - 3y^4)^6$$

$$1(2x^3)^6 - 6(2x^3)^5(3y^4)^1 + 15(2x^3)^4$$

$$(3y^4)^2 - 20(2x^3)^3(3y^4)^3 + 15(2x^3)^2$$

$$(3y^4)^4 - 6(2x^3)^1(3y^4)^5 + 1(3y^4)^6$$

$$1(64x^{18}) - 6(32x^{15})(3y^4) + 15(16x^{12})$$

$$(9y^8) - 20(8x^9)(27y^{12}) + 15(4x^6)$$

$$(87y^{16}) - 6(2x^3)(243y^{24}) + 1(729y^{24})$$

$$64x^{18} - 576x^{15}y^4 + 2,160x^{12}y^8 - 4,320x^9y^{12}$$

$$+ 4,860x^6y^{16} - 2,916x^3y^{20} + 729y^{24}$$

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

1 6 15 20 15 6 1