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Problemas

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

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

$40x^6y^4$ = resultado.

2. $(-2a^3bc)(-4a^2b^2c^2)(5abc)(-6ab^2)$

$(8a^5b^3c^3)(5abc)(-6ab^2)$

$(40a^6b^4c^4)(-6ab^2)$

$-240a^7b^6c^4$ = resultado.

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

$9a^4 + 15ab^2 - 12a$ = resultado.

$$4. \left(\frac{2}{3} a^3 b^2 - \frac{1}{4} a^2 b^3 + \frac{5}{6} a b^4 - \frac{2}{5} b^5 \right) \left(-\frac{1}{2} a b^2 \right)$$

$$R = -\frac{2}{6} a^4 b^4 + \frac{1}{8} a^3 b^5 - \frac{5}{12} a^2 b^6 + \frac{2}{10} a b^7$$

$$5. (x^4 - 2x^3 - 11x^2 + 30x - 20)(x^2 + 3x - 2)$$

$$\begin{aligned} & \underline{x^6} + \underline{3x^5} - \underline{2x^4} - \underline{2x^5} - \underline{6x^4} + \underline{4x^3} - \underline{11x^4} - \underline{33x^3} + \\ & \underline{22x^2} + \underline{30x^3} + \underline{90x^2} - \underline{60x} - \underline{20x^2} - \underline{60x} + \underline{40} = \end{aligned}$$

$$R = x^6 + x^5 - 19x^4 + x^3 + 92x^2 - 120x + 40.$$

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

$$\begin{aligned} & \underline{x^8} - \underline{x^7} + \underline{3x^6} + \underline{5x^6} - \underline{5x^5} + \underline{15x^4} + \underline{3x^4} - \underline{3x^3} + \\ & \underline{9x^2} - \underline{2x^3} + \underline{2x} - \underline{6x}. \end{aligned}$$

$$R = x^8 - x^7 + 8x^6 - 5x^5 + 18x^4 - 5x^3 + 9x^2 + 2x$$

$$7. (2x^4 - 2x^3 + 3x^2 + 5x + 10)(x + 2)$$

$$\begin{array}{r} \underline{2x^5} - \underline{2x^4} + \underline{3x^3} + \underline{5x^2} + \underline{10x} + \underline{4x^4} - \underline{4x^3} + \\ \underline{6x^2} + \underline{10x} + \underline{20} \end{array}$$

$$R = 2x^5 + 2x^4 - 1x^3 + 11x^2 + 20x + 20$$

$$8. (x^4 - 2x^3 - 11x^2 + 30x - 20)(x^2 + 3x - 2)$$

$$\begin{array}{r} \underline{x^6} - \underline{2x^5} - \underline{11x^4} - \underline{30x^3} - \underline{20x^2} + \underline{3x^5} - \underline{6x^4} - \\ \underline{33x^3} + \underline{90x^2} - \underline{60x} - \underline{2x^4} + \underline{4x^3} + \underline{22x^2} - \underline{60x} + \underline{40} \end{array}$$

$$R = x^6 + x^5 - 19x^4 - 59x^3 + 92x^2 - 120x + 40$$

$$9. (x^6 + 5x^4 + 3x^2 - 2x)(x^2 - x + 3)$$

$$\begin{array}{r} \underline{x^8} + \underline{5x^6} + \underline{3x^4} - \underline{2x^3} - \underline{x^7} - \underline{5x^5} - \underline{3x^3} + \underline{2x^2} + \\ \underline{3x^6} + \underline{15x^4} + \underline{3x^2} - \underline{6x} \end{array}$$

$$R = x^8 - x^7 + 8x^6 - 5x^5 + 18x^4 - 5x^3 + 5x^2 - 6x$$

$$10. (2x^4 - 2x^3 + 3x^2 + 5x + 10)(x+2)$$

$$\begin{array}{r} 2x^5 - 2x^4 + 3x^3 + 5x^2 + 10x + 4x^4 - 4x^3 + 6x^2 \\ + 10x + 20 \end{array}$$

$$R = 2x^5 + 2x^4 - x^3 + 11x^2 + 20x + 20$$

$$11. (a^2 + 2b)^3$$

$$(a^2 + 2b)(a^2 + 2b)(a^2 + 2b)$$

$$R = a^6 + 6a^4b + 12a^2b^2 + 8b^3$$

$$12. (5x^3 + 3y^2 - 4xy)^2$$

$$R = 25x^6 + 30x^3y^2 - 40x^4y + 9y^4 - 24xy^3 + 16x^2y^2$$

$$13. \left(\frac{1}{5}x + \frac{2}{3}\right)^3$$

$$R = \frac{x^3}{125} + \frac{2x^2}{25} + \frac{4x}{15} + \frac{8}{27}$$

$$14. (4x^3y - 2z)^3$$

$$R = 64x^9y^3 - 96x^6y^2z + 48x^3yz^2 - 8z^3.$$

$$15. \left(\frac{5}{2}a^2 - \frac{4}{3}b^3\right)^3$$

$$R = \frac{125a^6}{8} - 25a^4b^3 + \frac{40a^2b^6}{3} - \frac{64b^9}{27}.$$