Exercices de synthèse : opérations algébriques

1) $(2x^2y - 7xy^2 + 4) + (-8xy^2 + 6xy - 4x^2y) =$

$2x^2y - 4x^2y - 7xy^2 - 8xy^2 + 6xy + 4 =$

$-2x^2y - 15xy^2 + 6xy + 4$

2) $(5a + 2b + 4ab) - (-6a - 2ab + 7b) =$

$5a + 2b + 4ab + 6a + 2ab - 7b =$

$6ab + 11a - 5b$

3) $(8a^2 - 6)(2b + 4a) =$

$(8a^2 \cdot 2b) + (8a^2 \cdot 4a) + (-6 \cdot 2b) + (-6 \cdot 4a) =$

$16a^2b + 32a^3 + -12b + -24a =$

$16a^2b + 32a^3 - 12b - 24a$

4) $(2a - 3)^2 - 2(2a - 3) =$

$(4a^2 - 12a + 9) - 4a + 6 =$

$4a^2 - 12a - 4a + 9 + 6 =$

$4a^2 - 16a + 15$

5) $\dfrac{24x^3y^3 + 12x^3y^2 - 6x^2y}{-6x^2y} =$

$\dfrac{24x^3y^3}{-6x^2y} + \dfrac{12x^3y^2}{-6x^2y} - \dfrac{6x^2y}{-6x^2y} =$

$-4xy^2 - 2xy + 1$

6) $(x-3)(2x+5)-(3x+1)(5x-2) =$

$2x^2+5x-6x-15-(15x^2-6x+5x-2) =$

$2x^2-x-15+-15x^2+6x-5x+2 =$

$-13x^2-13$

7) $(2x-3)^2-(x+3)(2x-1) =$

$4x^2-12x+9-(2x^2-x+6x-3) =$

$4x^2-12x+9+-2x^2+x-6x+3 =$

$2x^2-17x+12$