

Corrigé de l'exercice 1

Développer et réduire les expressions suivantes.

$$A = (2x + 9)^2$$

$$A = (2x)^2 + 2 \times 2x \times 9 + 9^2$$

$$A = 4x^2 + 36x + 81$$

$$B = (x + 7)(-2x + 8)$$

$$B = -2x^2 + 8x + (-14x) + 56$$

$$B = -2x^2 - 6x + 56$$

$$C = (2x - 10)^2$$

$$C = (2x)^2 - 2 \times 2x \times 10 + 10^2$$

$$C = 4x^2 - 40x + 100$$

$$D = (10x - 8)(10x + 8)$$

$$D = (10x)^2 - 8^2$$

$$D = 100x^2 - 64$$

$$E = (3x - 4)^2 + (x - 2)(-x + 3)$$

$$E = (3x)^2 - 2 \times 3x \times 4 + 4^2 + -x^2 + 3x + 2x + (-6)$$

$$E = 9x^2 - 24x + 16 - x^2 + 5x - 6$$

$$E = 8x^2 - 19x + 10$$

$$F = (7x - 8)(7x + 8) + (6x + 4)^2$$

$$F = (7x)^2 - 8^2 + (6x)^2 + 2 \times 6x \times 4 + 4^2$$

$$F = 49x^2 - 64 + 36x^2 + 48x + 16$$

$$F = 85x^2 + 48x - 48$$

Corrigé de l'exercice 2

Développer et réduire les expressions suivantes.

$$A = (9x - 5)(9x + 5)$$

$$A = (9x)^2 - 5^2$$

$$A = 81x^2 - 25$$

$$B = (5x - 9)^2$$

$$B = (5x)^2 - 2 \times 5x \times 9 + 9^2$$

$$B = 25x^2 - 90x + 81$$

$$C = (10x + 3)^2$$

$$C = (10x)^2 + 2 \times 10x \times 3 + 3^2$$

$$C = 100x^2 + 60x + 9$$

$$D = (3x + 8)(6x - 8)$$

$$D = 18x^2 + (-24x) + 48x + (-64)$$

$$D = 18x^2 + 24x - 64$$

$$E = (5x - 6)(5x + 6) - (4x - 8)(7x - 8)$$

$$E = (5x)^2 - 6^2 - (28x^2 + (-32x) + (-56x) + 64)$$

$$E = 25x^2 - 36 - (28x^2 - 88x + 64)$$

$$E = 25x^2 - 36 - 28x^2 + 88x - 64$$

$$E = -3x^2 + 88x - 100$$

$$F = (10x - 5)^2 - (7x + 7)^2$$

$$F = (10x)^2 - 2 \times 10x \times 5 + 5^2 - ((7x)^2 + 2 \times 7x \times 7 + 7^2)$$

$$F = 100x^2 - 100x + 25 - (49x^2 + 98x + 49)$$

$$F = 100x^2 - 100x + 25 - 49x^2 - 98x - 49$$

$$F = 51x^2 - 198x - 24$$

Corrigé de l'exercice 3

Développer et réduire les expressions suivantes.

$$A = (x - 7)(-2x - 1)$$

$$A = -2x^2 + (-x) + 14x + 7$$

$$A = -2x^2 + 13x + 7$$

$$B = (9x + 2)^2$$

$$B = (9x)^2 + 2 \times 9x \times 2 + 2^2$$

$$B = 81x^2 + 36x + 4$$

$$C = (6x - 5)(6x + 5)$$

$$C = (6x)^2 - 5^2$$

$$C = 36x^2 - 25$$

$$D = (5x - 7)^2$$

$$D = (5x)^2 - 2 \times 5x \times 7 + 7^2$$

$$D = 25x^2 - 70x + 49$$

$$E = (4x - 8)^2 + (-4x - 10)(-3x - 9)$$

$$E = (4x)^2 - 2 \times 4x \times 8 + 8^2 + 12x^2 + 36x + 30x + 90$$

$$E = 16x^2 - 64x + 64 + 12x^2 + 66x + 90$$

$$E = 28x^2 + 2x + 154$$

$$F = (7x + 3)^2 + (5x + 9)(5x - 9)$$

$$F = (7x)^2 + 2 \times 7x \times 3 + 3^2 + (5x)^2 - 9^2$$

$$F = 49x^2 + 42x + 9 + 25x^2 - 81$$

$$F = 74x^2 + 42x - 72$$

Corrigé de l'exercice 4

Développer et réduire les expressions suivantes.

$$A = (2x + 9)(x + 4)$$

$$A = 2x^2 + 8x + 9x + 36$$

$$A = 2x^2 + 17x + 36$$

$$B = (5x + 3)(5x - 3)$$

$$B = (5x)^2 - 3^2$$

$$B = 25x^2 - 9$$

$$C = (7x - 1)^2$$

$$C = (7x)^2 - 2 \times 7x \times 1 + 1^2$$

$$C = 49x^2 - 14x + 1$$

$$D = (7x + 5)^2$$

$$D = (7x)^2 + 2 \times 7x \times 5 + 5^2$$

$$D = 49x^2 + 70x + 25$$

$$E = (7x + 9)^2 + (5x - 10)^2$$

$$E = (7x)^2 + 2 \times 7x \times 9 + 9^2 + (5x)^2 - 2 \times 5x \times 10 + 10^2$$

$$E = 49x^2 + 126x + 81 + 25x^2 - 100x + 100$$

$$E = 74x^2 + 26x + 181$$

$$F = (8x - 7)(8x + 7) + (x + 4)(-5x + 5)$$

$$F = (8x)^2 - 7^2 + -5x^2 + 5x + (-20x) + 20$$

$$F = 64x^2 - 49 - 5x^2 - 15x + 20$$

$$F = 59x^2 - 15x - 29$$

Corrigé de l'exercice 5

Développer et réduire les expressions suivantes.

$$A = (8x + 8)(8x - 8)$$

$$A = (8x)^2 - 8^2$$

$$A = 64x^2 - 64$$

$$B = (5x - 6)^2$$

$$B = (5x)^2 - 2 \times 5x \times 6 + 6^2$$

$$B = 25x^2 - 60x + 36$$

$$C = (3x + 9)^2$$

$$C = (3x)^2 + 2 \times 3x \times 9 + 9^2$$

$$C = 9x^2 + 54x + 81$$

$$D = (x + 10)(9x - 10)$$

$$D = 9x^2 + (-10x) + 90x + (-100)$$

$$D = 9x^2 + 80x - 100$$

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

$$E = -((9x)^2 - 2 \times 9x \times 4 + 4^2) + (3x)^2 + 2 \times 3x \times 4 + 4^2$$

$$E = -(81x^2 - 72x + 16) + 9x^2 + 24x + 16$$

$$E = -81x^2 + 72x - 16 + 9x^2 + 24x + 16$$

$$E = -72x^2 + 96x$$

$$F = (x + 7)(-2x - 5) + (6x - 2)(6x + 2)$$

$$F = -2x^2 + (-5x) + (-14x) + (-35) + (6x)^2 - 2^2$$

$$F = -2x^2 - 19x - 35 + 36x^2 - 4$$

$$F = 34x^2 - 19x - 39$$

Corrigé de l'exercice 6

Développer et réduire les expressions suivantes.

$$A = (10x - 7)(10x + 7)$$

$$A = (10x)^2 - 7^2$$

$$A = 100x^2 - 49$$

$$B = (6x - 8)^2$$

$$B = (6x)^2 - 2 \times 6x \times 8 + 8^2$$

$$B = 36x^2 - 96x + 64$$

$$C = (x + 6)^2$$

$$C = x^2 + 2 \times x \times 6 + 6^2$$

$$C = x^2 + 12x + 36$$

$$D = (-10x + 5)(-7x - 9)$$

$$D = 70x^2 + 90x + (-35x) + (-45)$$

$$D = 70x^2 + 55x - 45$$

$$E = -(-7x + 9)(6x - 3) - (5x + 10)^2$$

$$E = -(-42x^2 + 21x + 54x + (-27)) - ((5x)^2 + 2 \times 5x \times 10 + 10^2)$$

$$E = -(-42x^2 + 75x - 27) - (25x^2 + 100x + 100)$$

$$E = 42x^2 - 75x + 27 - 25x^2 - 100x - 100$$

$$E = 17x^2 - 175x - 73$$

$$F = -(3x + 10)(3x - 10) + (2x - 9)^2$$

$$F = -((3x)^2 - 10^2) + (2x)^2 - 2 \times 2x \times 9 + 9^2$$

$$F = -(9x^2 - 100) + 4x^2 - 36x + 81$$

$$F = -9x^2 + 100 + 4x^2 - 36x + 81$$

$$F = -5x^2 - 36x + 181$$