

**Corrigé de l'exercice 1**

Développer et réduire les expressions suivantes.

$$A = (9x - 10)^2$$

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

$$A = 81x^2 - 180x + 100$$

$$B = (7x + 3)(7x - 3)$$

$$B = (7x)^2 - 3^2$$

$$B = 49x^2 - 9$$

$$C = (-2x - 4)(-7x + 1)$$

$$C = 14x^2 + (-2x) + 28x + (-4)$$

$$C = 14x^2 + 26x - 4$$

$$D = (6x + 4)^2$$

$$D = (6x)^2 + 2 \times 6x \times 4 + 4^2$$

$$D = 36x^2 + 48x + 16$$

$$E = (4x + 10)^2 + (7x - 10)^2$$

$$E = (4x)^2 + 2 \times 4x \times 10 + 10^2 + (7x)^2 - 2 \times 7x \times 10 + 10^2$$

$$E = 16x^2 + 80x + 100 + 49x^2 - 140x + 100$$

$$E = 65x^2 - 60x + 200$$

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

$$F = -((9x)^2 - 9^2) - (-2x^2 + (-10x) + (-20x) + (-100))$$

$$F = -(81x^2 - 81) - (-2x^2 - 30x - 100)$$

$$F = -81x^2 + 81 + 2x^2 + 30x + 100$$

$$F = -79x^2 + 30x + 181$$

**Corrigé de l'exercice 2**

Factoriser les expressions suivantes.

$$A = 36x^2 - 4 - (6x - 2)(8x - 4)$$

$$A = (6x)^2 - 2^2 - (6x - 2)(8x - 4)$$

$$A = (6x - 2)(6x + 2) - (6x - 2)(8x - 4)$$

$$A = (6x - 2)(6x + 2 - (8x - 4))$$

$$A = (6x - 2)(6x + 2 - 8x + 4)$$

$$A = (6x - 2)(-2x + 6)$$

$$B = -(8x + 1)(10x - 10) + (10x - 10)^2$$

$$B = (10x - 10)(-(8x + 1) + 10x - 10)$$

$$B = (10x - 10)(-8x - 1 + 10x - 10)$$

$$B = (10x - 10)(2x - 11)$$

$$C = 9x^2 - 16$$

$$C = (3x)^2 - 4^2$$

$$C = (3x + 4)(3x - 4)$$

$$D = -(5x + 8)(9x + 3) + (9x + 3)$$

$$D = -(5x + 8)(9x + 3) + (9x + 3) \times 1$$

$$D = (9x + 3)(-(5x + 8) + 1)$$

$$D = (9x + 3)(-5x - 8 + 1)$$

$$D = (9x + 3)(-5x - 7)$$

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

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

$$E = (-9x - 10)(-4x - 9 - 8x - 8)$$

$$E = (-9x - 10)(-12x - 17)$$

$$F = 16 - (-3x + 2)^2$$

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

$$F = (4 - 3x + 2)(4 - (-3x + 2))$$

$$F = (4 - 3x + 2)(4 + 3x - 2)$$

$$F = (-3x + 6)(3x + 2)$$

### Corrigé de l'exercice 3

Développer et réduire les expressions suivantes.

$$A = (8x + 7)(8x - 7)$$

$$A = (8x)^2 - 7^2$$

$$A = 64x^2 - 49$$

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

$$B = x^2 + 2 \times x \times 2 + 2^2$$

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

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

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

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

$$D = (9x - 3)(-8x - 10)$$

$$D = -72x^2 + (-90x) + 24x + 30$$

$$D = -72x^2 - 66x + 30$$

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

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

$$E = -(36x^2 - 36x + 9) + x^2 + 4x + 4$$

$$E = -36x^2 + 36x - 9 + x^2 + 4x + 4$$

$$E = -35x^2 + 40x - 5$$

$$F = -(8x + 4)(3x + 8) + (5x + 1)(5x - 1)$$

$$F = -(24x^2 + 64x + 12x + 32) + (5x)^2 - 1^2$$

$$F = -(24x^2 + 76x + 32) + 25x^2 - 1$$

$$F = -24x^2 - 76x - 32 + 25x^2 - 1$$

$$F = x^2 - 76x - 33$$

### Corrigé de l'exercice 4

Factoriser les expressions suivantes.

$$A = 4x^2 - 1$$

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

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

$$B = (8x - 4)(5x + 5) + 25x^2 - 25$$

$$B = (8x - 4)(5x + 5) + (5x)^2 - 5^2$$

$$B = (8x - 4)(5x + 5) + (5x + 5)(5x - 5)$$

$$B = (5x + 5)(8x - 4 + 5x - 5)$$

$$B = (5x + 5)(13x - 9)$$

$$C = -(-3x - 3) + (x + 4)(-3x - 3)$$

$$C = -(-3x - 3) \times 1 + (x + 4)(-3x - 3)$$

$$C = (-3x - 3)(-1 + x + 4)$$

$$C = (-3x - 3)(x + 3)$$

$$D = (-8x - 9)^2 + (-8x - 9)(9x + 4)$$

$$D = (-8x - 9)(-8x - 9 + 9x + 4)$$

$$D = (-8x - 9)(x - 5)$$

$$E = 49 - (5x - 1)^2$$

$$E = 7^2 - (5x - 1)^2$$

$$E = (7 + 5x - 1)(7 - (5x - 1))$$

$$E = (7 + 5x - 1)(7 - 5x + 1)$$

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

$$F = -(-x + 1)(-5x + 10) + (-x - 10)(-x + 1)$$

$$F = (-x + 1)(-(-5x + 10) - x - 10)$$

$$F = (-x + 1)(5x - 10 - x - 10)$$

$$F = (-x + 1)(4x - 20)$$

### Corrigé de l'exercice 5

Développer et réduire les expressions suivantes.

$$A = (4x - 8)^2$$

$$A = (4x)^2 - 2 \times 4x \times 8 + 8^2$$

$$A = 16x^2 - 64x + 64$$

$$B = (7x + 6)^2$$

$$B = (7x)^2 + 2 \times 7x \times 6 + 6^2$$

$$B = 49x^2 + 84x + 36$$

$$C = (8x - 2)(-10x + 7)$$

$$C = -80x^2 + 56x + 20x + (-14)$$

$$C = -80x^2 + 76x - 14$$

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

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

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

$$E = (3x - 4)^2 + (7x + 10)^2$$

$$E = (3x)^2 - 2 \times 3x \times 4 + 4^2 + (7x)^2 + 2 \times 7x \times 10 + 10^2$$

$$E = 9x^2 - 24x + 16 + 49x^2 + 140x + 100$$

$$E = 58x^2 + 116x + 116$$

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

$$F = 14x^2 + 70x + (-10x) + (-50) - ((9x)^2 - 7^2)$$

$$F = 14x^2 + 60x - 50 - (81x^2 - 49)$$

$$F = 14x^2 + 60x - 50 - 81x^2 + 49$$

$$F = -67x^2 + 60x - 1$$

### Corrigé de l'exercice 6

Factoriser les expressions suivantes.

$$A = -(4x + 1)(-9x - 6) + (4x + 1)^2$$

$$A = (4x + 1)(-(-9x - 6) + 4x + 1)$$

$$A = (4x + 1)(9x + 6 + 4x + 1)$$

$$A = (4x + 1)(13x + 7)$$

$$B = (-5x + 7)(8x + 10) - (-7x + 1)(-5x + 7)$$

$$B = (-5x + 7)(8x + 10 - (-7x + 1))$$

$$B = (-5x + 7)(8x + 10 + 7x - 1)$$

$$B = (-5x + 7)(15x + 9)$$

$$C = 36x^2 - 4$$

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

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

$$D = -(x + 5) - (x + 5)(8x - 8)$$

$$D = -(x + 5) \times 1 - (x + 5)(8x - 8)$$

$$D = (x + 5)(-1 - (8x - 8))$$

$$D = (x + 5)(-1 - 8x + 8)$$

$$D = (x + 5)(-8x + 7)$$

$$E = 81 - (-4x - 9)^2$$

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

$$E = (9 - 4x - 9)(9 - (-4x - 9))$$

$$E = (9 - 4x - 9)(9 + 4x + 9)$$

$$E = -4x(4x + 18)$$

$$F = 16x^2 - 49 + (-8x + 7)(4x - 7)$$

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

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

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

$$F = (4x - 7)(-4x + 14)$$