

Corrigés Savoir Cf. 3

Corrigé Exercice 7

1)

$$A = 2x + x(3x + 1)$$

$$A = x(2 + (3x + 1))$$

$$A = x(3x + 3) = 3x(x + 1)$$

$$B = x^3(x - 2) - x^3(5x + 1)$$

$$B = x^3((x - 2) + (5x + 1))$$

$$B = x^3(6x - 1)$$

$$C = (3x + 7)(2 - 5x) + (3x + 7)(x + 6)$$

$$C = (3x + 7)((2 - 5x) + (x + 6))$$

$$C = (3x + 7)(-4x + 8) = -4(3x + 7)(x - 2)$$

$$D = (x + 3)^2 + (5 - 2x)(x + 3)$$

$$D = (x + 3)((x + 3) + (5 - 2x))$$

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

$$J = x^3 + x^3(x - 2)$$

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

$$J = x^3(x - 1)$$

$$K = (2x - 1)(4 + x) + x(4 + x)$$

$$K = (4 + x)((2x - 1) + x)$$

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

$$L = (2x + 5) + (2x + 5)^2$$

$$L = (2x + 5)(1 + (2x + 5))$$

$$L = (2x + 5)(2x + 6)$$

$$M = (3x - 4)(2x - 1) + (-1 + 2x)(2 + 5x)$$

$$M = (2x - 1)((3x - 4) + (2 + 5x))$$

$$M = (2x - 1)(8x - 2) = 2(2x - 1)(4x - 1)$$

Corrigé Exercice 8

2)

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

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

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

$$E = (6x + 2)(-9x + 8) = 2(3x + 1)(-9x + 8)$$

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

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

$$F = (x + 3)(2x - 5 + 6x + 12)$$

$$F = (x + 3)(8x + 7)$$

$$G = (n + 1)(n - 1) - 2(n - 1)(2n + 6)$$

$$G = (n - 1)((n + 1) - 2(2n + 6))$$

$$G = (n - 1)(n + 1 - 4n - 12)$$

$$G = (n - 1)(-3n - 11) = -(n - 1)(3n + 11)$$

$$H = (2x + 3) - (2x + 3)(5x + 7)$$

$$H = (2x + 3)(1 - (5x + 7))$$

$$H = (2x + 3)(1 - 5x - 7)$$

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

$$I = (4 - 6x)(4 + 6x) - (4 - 6x)^2$$

$$I = (4 - 6x)((4 + 6x) - (4 - 6x))$$

$$I = (4 - 6x)(4 + 6x - 4 + 6x)$$

$$I = (4 - 6x)12x = 24x(2 - 3x)$$

$$N = (5t + 3)^2 + 3(5t + 3)(7t - 2)$$

$$N = (5t + 3)((5t + 3) + 3(7t - 2))$$

$$N = (5t + 3)(5t + 3 + 21t - 6)$$

$$N = (5t + 3)(26t - 3)$$

$$O = (1 + 3x)^2 + (1 + 3x)$$

$$O = (1 + 3x)((1 + 3x) + 1)$$

$$O = (1 + 3x)(1 + 3x + 1)$$

$$O = (1 + 3x)(3x + 2)$$

$$P = (4 - 3x)(1 + 2x) - (1 + 2x)^2$$

$$P = (1 + 2x)((4 - 3x) - (1 + 2x))$$

$$P = (1 + 2x)(4 - 3x - 1 - 2x)$$

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

$$Q = (6 - 2x)(5x + 4) + 3(3 + 2x)(6 - 2x)$$

$$Q = (6 - 2x)((5x + 4) + 3(3 + 2x))$$

$$Q = (6 - 2x)(5x + 4 + 9 + 6x)$$

$$Q = (6 - 2x)(11x + 13) = 2(3 - x)(11x + 13)$$

Corrigé Exercice 9

1) a) $(2x - 1)(6 + x) + (4x - 3)(2x - 1) = (2x - 1)((6 + x) + (4x - 3)) = (2x - 1)(5x + 3)$

b) $C = (2x - 1)(6 + x) + (4x - 3)(2x - 1) - 2(5x + 3)^2$

$$C = (2x - 1)(5x + 3) - 2(5x + 3)^2$$

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

$$C = (5x + 3)(2x - 1 - 10x - 6)$$

$$C = \mathbf{(5x + 3)(-8x - 7)}$$

2) a) $A + 2B = (3 - 2x)(5x - 1) + 2((5x - 1)^2)$
 $= 15x - 3 - 10x^2 + 2x + 2(25x^2 - 10x + 1)$
 $= -10x^2 + 17x - 3 + 50x^2 - 20x + 2$
 $= \mathbf{40x^2 - 3x - 1}$

b) $A - B = (5x - 1)^2 - (3 - 2x)(5x - 1)$
 $= (5x - 1)((5x - 1) - (3 - 2x))$
 $= (5x - 1)(5x - 1 - 3 + 2x)$
 $= \mathbf{(5x - 1)(7x - 4)}$