## Exercice 6

1) $A = 3x - 8 + 4x + 5 = 3x - 4x - 8 + 5 = \mathbf{-x - 3}$

$B = 3x^2 + 5x - 6 - 2x^2 - 4x - 3 = 3x^2 - 2x^2 + 5x - 4x - 6 - 3 = \mathbf{x^2 + x - 9}$

$C = 5x^2 - 7 - 9x^2 + x - 3x + 9 = 5x^2 - 9x^2 + x - 3x - 7 + 9 = \mathbf{-4x^2 - 2x + 2}$

$D = 4x^2 - \left(5x + x^2 - 6x\right) + 7x = 4x^2 - 5x - x^2 + 6x + 7x = 4x^2 - x^2 - 5x + 6x + 7x = \mathbf{3x^2 + 8x}$

$E = 3x - (4 + 2x) + (x^2 + 7) = 3x - 4 - 2x + x^2 + 7 = x^2 + 3x - 2x - 4 + 7 = \mathbf{x^2 + x + 3}$

$F = 3x^2 - (4x - 1) - (x^2 + 5x) = 3x^2 - 4x + 1 - x^2 - 5x = 3x^2 - x^2 - 4x - 5x + 1 = \mathbf{2x^2 - 9x + 1}$

$G = 2 \times 3x \times 4 = 2 \times 3 \times 4 \times x = \mathbf{24x}$

$H = 3 \times 5x \times 2x = 3 \times 5 \times 2 \times x \times x = \mathbf{30x^2}$

$I = (-7x) \times 3x = -7 \times 3 \times x \times x = \mathbf{-21x^2}$

$J = 7x^2 \times 2x^2 = 7 \times 2 \times x^2 \times x^2 = 14x^{2+2} = \mathbf{14x^4}$


2) $A = 7(3x + 5) = 7 \times 3x + 7 \times 5 = \mathbf{21x + 35}$

$B = 4x(2x + 6) = 4x \times 2x + 4x \times 6 = \mathbf{8x^2 + 24x}$

$C = -9a(3a + b) = -9a \times 3a - 9a \times b = \mathbf{-27a^2 - 9ab}$

$D = -5(-2x - 4) = -5 \times (-2x) - 5 \times (-4) = \mathbf{10x + 20}$

$E = (x + 5)(2x + 4) = x(2x + 4) + 5(2x + 4) = x \times 2x + x \times 4 + 5 \times 2x + 5 \times 4 = 2x^2 + 4x + 10x + 20$

$E = \mathbf{2x^2 + 14x + 20}$

$F = (2x + 3)(5 - 4x) = 2x(5 - 4x) + 3(5 - 4x) = 10x - 8x^2 + 15 - 12x = \mathbf{-8x^2 - 2x + 15}$

$G = (a + 7)(a + 7) = a(a + 7) + 7(a + 7) = a^2 + 7a + 7a + 49 = \mathbf{a^2 + 14a + 49}$

$H = (t - 10)^2 = (t - 10)(t - 10) = t(t - 10) - 10(t - 10) = t^2 - 10t - 10t + 100 = \mathbf{t^2 - 20t + 100}$

$I = (t + 5)(t - 5) = t(t - 5) + 5(t - 5) = t^2 - 5t + 5t - 25 = \mathbf{t^2 - 25}$

$J = (5x + 2)^2 = (5x + 2)(5x + 2) = 5x(5x + 2) + 2(5x + 2) = 25x^2 + 10x + 10x + 4 = \mathbf{25x^2 + 20x + 4}$

$K = (3x - 4)^2 = (3x - 4)(3x - 4) = 3x(3x - 4) - 4(3x - 4) = 9x^2 - 12x - 12x + 16 = \mathbf{9x^2 - 24x + 16}$

$L = (3x + 2)(3x - 2) = 3x(3x - 2) + 2(3x - 2) = 9x^2 - 6x + 6x - 4 = \mathbf{9x^2 - 4}$