**SOUTIEN : DEVELOPPEMENT – FACTORISATION**

## EXERCICE 1 :

Développer, puis réduire, si possible, chaque expression :

A = 2x(x + 3)

B = −7y²(−5 − 2y²)

C = (x + 5)(x + 1)

D = (2x − 5) (x + 4)

E = (4 − a)²

F = (2x + 3)²

G = (4 − 7x)(4 + 7x)

H = (x + 4)(x − 6) + (−1 + x)(x − 7)

I = −3(a² + 2) − (a − 3)(2a + 7)

J = 4 − (2x + 1)²

## EXERCICE 2 :

Factoriser chaque expression :

A = 9x² − 5x

B = 6x + 9

C = x(x+ 5) + x(3x − 2)

D = (x + 4)(x − 6) + (−1 + x)(x − 6)

E = (3x − 1) − (3x − 1)²

F = x² + 8x + 16

G = 4 − x²

H = 9x² − 30x + 25

I = 25 − 36a²

J = (4x − 3)² − 1

**CORRECTION DU SOUTIEN : DEVELOPPEMENT – FACTORISATION**

## EXERCICE 1 :

$A = 2x(x + 3) =$ **$2x^2 + 6x$**

$B = -7y^2(-5 - 2y^2) =$ **$35y^2 + 14y^4$**

$C = (x + 5)(x + 1) = x^2 + x + 5x + 5 =$ **$x^2 + 6x + 5$**

$D = (2x - 5)(x + 4) = 2x^2 + 8x - 5x - 20 =$ **$2x^2 + 3x - 20$**

$E = (4 - a)^2 = 4^2 - 2 \times 4 \times a + a^2 =$ **$16 - 8a + a^2$**

$F = (2x + 3)^2 = (2x)^2 + 2 \times 2x \times 3 + 3^2 =$ **$4x^2 + 12x + 9$**

$G = (4 - 7x)(4 + 7x) = 4^2 - (7x)^2 =$ **$16 - 49x^2$**

$H = (x + 4)(x - 6) + (-1 + x)(x - 7) = (x^2 - 6x + 4x - 24) + (-x + 7 + x^2 - 7x)$
  $= (x^2 - 2x - 24) + (x^2 - 8x + 7) = x^2 - 2x - 24 + x^2 - 8x + 7 =$ **$2x^2 - 10x - 17$**

$I = -3(a^2 + 2) - (a - 3)(2a + 7) = (-3a^2 - 6) - (2a^2 + 7a - 6a - 21)$
  $= (-3a^2 - 6) - (2a^2 + a - 21) = -3a^2 - 6 - 2a^2 - a + 21 =$ **$-5a^2 - a + 15$**

$J = 4 - (2x + 1)^2 = 4 - [(2x)^2 + 2 \times 2x \times 1 + 1^2] = 4 - (4x^2 + 4x + 1)$
  $= 4 - 4x^2 - 4x - 1 =$ **$3 - 4x^2 - 4x$**

## EXERCICE 2 :

$A = 9x^2 - 5x = 9x \times x - 5 \times x =$ **$x(9x - 5)$**

$B = 6x + 9 = 3 \times 2x + 3 \times 3 =$ **$3(2x + 3)$**

$C = x(x + 5) + x(3x - 2) = x[(x + 5) + (3x - 2)]$
  $= x(x + 5 + 3x - 2) =$ **$x(4x + 3)$**

$D = (x + 4)(x - 6) + (-1 + x)(x - 6) = (x - 6)[(x - 4) + (-1 + x)]$
  $= (x - 6)(x - 4 - 1 + x) =$ **$(x - 6)(2x - 5)$**

$E = (3x - 1) - (3x - 1)^2 = 1 \times (3x - 1) - (3x - 1)(3x - 1)$
  $= (3x - 1)[1 - (3x - 1)] = (3x - 1)(1 - 3x + 1) =$ **$(3x - 1)(2 - 3x)$**

$F = x^2 + 8x + 16 = x^2 + 2 \times x \times 4 + 4^2 =$ **$(x + 4)^2$**

$G = 4 - x^2 = 2^2 - x^2 =$ **$(2 - x)(2 + x)$**

$H = 9x^2 - 30x + 25 = (3x)^2 - 2 \times 3x \times 5 + 5^2 =$ **$(3x - 5)^2$**

$I = 25 - 36a^2 = 5^2 - (6a)^2 =$ **$(5 - 6a)(5 + 6a)$**

$J = (4x - 3)^2 - 1 = (4x - 3)^2 - 1^2 = [(4x - 3) - 1][(4x - 3) + 1] =$ **$(4x - 4)(4x - 2)$**