

Lorsque qu'une expression se présente sous la forme d'un produit, dire qu'on la développe, c'est dire qu'on la transforme en somme.



Pour effectuer un développement, on utilise certaines formules:

**La distributivité**  $a(b + c) = a \times b + a \times c$

Exemples :  $3(x + 2) = 3x + 2$  ;  $(2x - 3) \times 5 = 10x - 15$

**La double-distributivité**  $(a + b)(c + d) = a \times c + a \times d + b \times c + b \times d$

Exemple :  $(3 - 4x)(x + 2) = 3x + 6 - 4x^2 - 8x = -4x^2 - 5x + 6$

Je développe en utilisant la distributivité simple ou double

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

$$B = -3(2x^2 - 4x + 6)$$

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

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

$$E = -3(2x + 3y - 1)$$

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

$$G = (-x + 1)(5x + 3)$$

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

$$I = (-4x + 1)(2x + 6)$$

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

$$K = (7x + 3)(2x + 9)$$

$$L = (-6x - 2)(2x - 3)$$

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

$$Q = -3(-2x + 2)(-3x + 1)$$

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

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

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

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

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

$$T = (-6x + 1)(2x + 1) - (-4x + 3)(7x + 2)$$

## CORRECTION

### Exercice 1:

$$A = 4(2x + 6) = 8x + 24$$

$$B = -3(2x^2 - 4x + 6) = -6x^2 + 12x - 18$$

$$C = (2x + 1)(2x + 4) = 4x^2 + 8x + 2x + 4 = 4x^2 + 10x + 4$$

$$D = (-3x + 1)(2x - 5) = -6x^2 + 15x + 2x - 5 = -6x^2 + 17x - 5$$

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

$$F = (3x + 1)(2x - 4) = 6x^2 - 12x + 2x - 4 = 6x^2 - 10x - 4$$

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

$$H = (7x + 2)(2x + 3) = 14x^2 + 21x + 4x + 6 = 14x^2 + 25x + 6$$

$$I = (-4x + 1)(2x + 6) = -8x^2 - 24x + 2x + 6 = -8x^2 - 22x + 6$$

$$J = (-3x + 1)(-5x + 2) = -15x^2 - 6x - 5x + 2 = -15x^2 - 11x + 2$$

$$K = (7x + 3)(2x + 9) = 14x^2 + 63x + 6x + 27 = 14x^2 + 69x + 27$$

$$L = (-6x - 2)(2x - 3) = -12x^2 + 18x - 4x + 6 = -12x^2 + 14x + 6$$

$$M = 5(-2x + 1)(2x + 3) = 5(-4x^2 - 4x + 3) = -20x^2 - 20x + 15$$

$$N = (2x + 1)(x + 3) + (-x + 1)(2x - 4) = 2x^2 + 7x + 3 - 2x^2 + 6x - 4 = 13x - 1$$

$$O = (-x + 1)(2x + 3) + (5x + 1)(3x + 2) = -2x^2 - 3x + 2x + 3 + 15x^2 + 10x + 3x + 2 = 13x^2 + 12x + 5$$

$$P = -3(2x + 4)(x + 3) = -3(2x^2 + 6x + 4x + 12) = -6x^2 - 30x - 36$$

$$Q = -3(-2x + 2)(-3x + 1) = -3(6x^2 - 2x - 6x + 2) = -18x^2 + 2x - 6$$

$$\begin{aligned} R &= (3x + 1)(x + 2) - (x + 1)(2x + 4) = 3x^2 + 6x + x + 2 - (2x^2 + 4x + 2x + 4) \\ &= 3x^2 + 7x + 2 - 2x^2 - 6x - 4 \\ &= x^2 + x - 2 \end{aligned}$$

$$\begin{aligned} S &= (-3x + 1)(3x + 2) - (4x + 5)(2x + 3) = -9x^2 - 6x + 3x + 2 - (8x^2 + 12x + 10x + 15) \\ &= -9x^2 - 3x + 2 - 8x^2 - 22x - 15 \\ &= -17x^2 - 25x - 13 \end{aligned}$$

$$\begin{aligned} T &= (-6x + 1)(2x + 1) - (-4x + 3)(7x + 2) = -12x^2 - 6x + 2x + 1 - (-28x^2 - 8x + 21x + 6) \\ &= -12x^2 - 4x + 1 + 28x^2 - 13x - 6 \\ &= 16x^2 - 17x - 5 \end{aligned}$$