

# DEVELOPPEMENTS

## I. Rappel : La distributivité simple

Développer et réduire si possible :

$$A = -(3 - 2x)$$

$$B = 3(4 - 6x)$$

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

$$D = 8x(x - 3) - (4 - 3x)$$

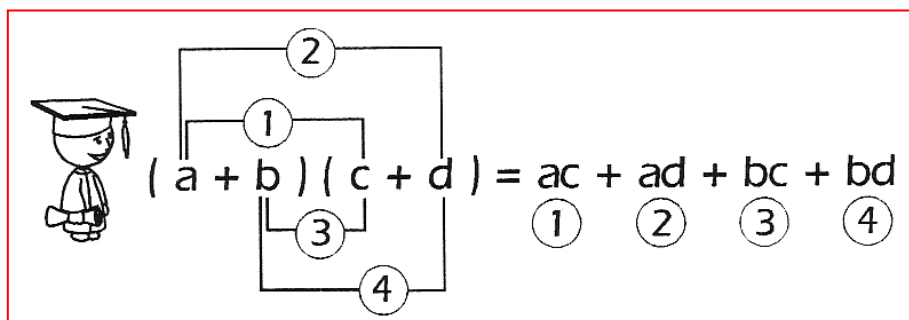
$$A = 2x - 3$$

$$B = -18x + 12$$

$$C = -10x^2 - 14x$$

$$D = 8x^2 - 24x - 4 + 3x = 8x^2 - 21x - 4$$

## II. La double distributivité



Développer et réduire si possible :

$$1) A = (x + 3)(y + 2) \quad B = (3 - 2x)(4 - x)$$

$$2) C = 2(3 + x)(3 - x) \quad D = 2x(1 - x) - (x - 3)(3x + 2)$$

$$1) A = xy + 2x + 3y + 6$$

$$B = 12 - 3x - 8x + 2x^2$$

$$= 2x^2 - 11x + 12$$

$$2) C = 2(9 - 3x + 3x - x^2)$$

$$= 18 - 6x + 6x - 2x^2$$

$$= -2x^2 + 18$$

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

$$\begin{aligned}
 &= 2x - 2x^2 - (3x^2 + 2x - 9x - 6) \\
 &= 2x - 2x^2 - 3x^2 - 2x + 9x + 6 \\
 &= -5x^2 + 9x + 6
 \end{aligned}$$

### III. Une identité remarquable

$$(a - b)(a + b) = a^2 - b^2$$

Démonstration :

$$\begin{aligned}
 (a - b)(a + b) &= a^2 + ab - ba - b^2 \\
 &= a^2 - b^2
 \end{aligned}$$

Développer et réduire éventuellement :

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

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

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

$$A = (x - 3)(x + 3) = x^2 - 3^2 = x^2 - 9$$

$$B = (4 - x)(x + 4) = (4 - x)(4 + x) = 4^2 - x^2 = 16 - x^2$$

$$\begin{aligned}
 C &= 2(x + 3) + (2x + 3)(2x - 3) \\
 &= 2x + 6 + (2x)^2 - 3^2 \\
 &= 2x + 6 + 4x^2 - 9 \\
 &= 4x^2 + 2x - 3
 \end{aligned}$$