

### EXERCICE 1 – Développer (niveau 1)

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$$\begin{aligned}(x + t)(y + z) &= xy + xz + ty + tz \\(a + x)(b + y) &= ab + ay + bx + xy \\3 + x)(2 + y) &= 3 \cdot 2 + 3y + 2x + xy = 6 + 3y + 2x + xy \\(x + 6)(y + 4) &= xy + 4x + 6y + 24 \\(a + 2)(b + 7) &= ab + 7a + 2b + 14 \\(b + a)(d + c) &= bd + bc + ad + ac \\(c + d)(a + b) &= ac + bc + ad + bd \\(1 + x)(x + y) &= x + y + x^2 + xy \\(ab + 2)(c + 3) &= abc + 3ab + 2c + 6 \\(xz + b)(y + ac) &= xyz + xzac + by + abc\end{aligned}$$

### EXERCICE 2 – Développer (niveau 2)

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$$\begin{aligned}(x + 3)(y - 2) &= xy - 2x + 3y - 6 \\(x - 4)(y + 1) &= xy + x - 4y - 4 \\(x + 1)(y - 2) &= xy - 2x + y - 2 \\(5 - x)(3 + x) &= 15 + 5x - 3x - x^2 = 15 + 2x - x^2 \\(2a + 4)(3 + 5) &= (2a + 4) \cdot 8 = 16a + 32 \\(x^2 + 3)(2x + 4) &= 2x^3 + 4x^2 + 6x + 12 \\(3x - 7)(4x^2 + 1) &= 12x^3 + 3x - 28x^2 - 7 \\(1 + x)(x + 1) &= x^2 + 2x + 1 \\(3x - 5)(x - 2) &= 3x^2 - 6x - 5x + 10 = 3x^2 - 11x + 10 \\(4 + x)(6 - 2x^2) &= 24 - 8x^2 + 6x - 2x^3\end{aligned}$$

### EXERCICE 3 – Développer puis réduire (niveau 1)

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

$$\begin{aligned}B &= (x + 4)(x - 6) \\B &= x^2 - 6x + 4x - 24 \\B &= x^2 - 2x - 24\end{aligned}$$

$$\begin{aligned}C &= (a - 5)(2a + 7) \\C &= 2a^2 + 7a - 10a - 35 \\C &= 2a^2 - 3a - 35\end{aligned}$$

$$\begin{aligned}D &= (4 + x)(2x + 3) \\D &= 8x + 12 + 2x^2 + 3x \\D &= 2x^2 + 11x + 12\end{aligned}$$

$$\begin{aligned}E &= (x - 2)(x - 1) \\E &= x^2 - x - 2x + 2 \\E &= x^2 - 3x + 2\end{aligned}$$

$$\begin{aligned}F &= (4 - 2x)(1 - 3x) \\F &= 4 - 12x - 2x + 6x^2 \\F &= 6x^2 - 14x + 4\end{aligned}$$

$$G = (x + 3)(x + 3)$$

$$G = x^2 + 3x + 3x + 9$$

$$G = x^2 + 6x + 9$$

$$H = (2 - x)(2 - x)$$

$$H = 4 - 2x - 2x + x^2$$

$$H = x^2 - 4x + 4$$

$$I = (a + b)(a - b)$$

$$I = a^2 - ab + ab - b^2$$

$$I = a^2 - b^2$$

$$J = (x + 6)^2$$

$$J = x^2 + 12x + 36$$

#### EXERCICE 4 – Développer puis réduire (niveau 2)

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$$A = (4x - 1)(6 - 3x)$$

$$A = 24x - 12x^2 - 6 + 3x$$

$$A = -12x^2 + 27x - 6$$

$$B = (x - 2)(x + 7) + x^2$$

$$B = x^2 + 7x - 2x - 14 + x^2$$

$$B = 2x^2 + 5x - 14$$

$$C = 2x^2 + (x - 4)(3 - x)$$

$$C = 2x^2 + (3x - x^2 - 12 + 4x)$$

$$C = 2x^2 + (7x - x^2 - 12)$$

$$C = x^2 + 7x - 12$$

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

$$D = x^2 - x - 3x - 3$$

$$D = x^2 - 4x - 3$$

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

$$E = x^2 - 3x + 2x - 6 + 3x^2$$

$$E = 4x^2 - x - 6$$