

Exercice 1**Réductions**

$$A = -3x - 10 + 4x + 7$$

$$B = 3x + 2 - 9x - 7$$

$$C = -9x^2 - 7 - 7x^2 + 6 + 6x - 7$$

$$D = -7x - 1 - 7x + 8 + 4x + 3x$$

$$E = 3x + 15 + 9x + 18x + 17$$

$$F = -4x - 5 + 4x + 1$$

Exercice 2**Simple développement**

$$A = 10(x + 3)$$

$$B = 8(-10x + 2)$$

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

$$D = -10x(-6x + 3)$$

$$E = 2x(10x - 2) - 4$$

$$F = -3x - 7x(-10x + 9)$$

Exercice 3**Double développement**

$$A = (x + 10)(x + 6)$$

$$B = (8x - 6)(-5x - 10)$$

$$C = (-6x + 9)(7x - 3)$$

$$D = (5x + 2)(-6x + 2)$$

$$E = (-8x + 8)^2$$

$$F = (2x - 6)^2$$

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Solutions des exercices

Solution 1

$$\begin{aligned}A &= -3x - 10 + 4x + 7 \\ &= -3x - 10 + 4x + 7 \\ &= -3x + 4x - 10 + 7 \\ &= (-3 + 4) \times x - 3 \\ &= x - 3\end{aligned}$$

$$\begin{aligned}B &= 3x + 2 - 9x - 7 \\ &= 3x + 2 - 9x - 7 \\ &= 3x - 9x + 2 - 7 \\ &= (3 - 9) \times x - 5 \\ &= -6x - 5\end{aligned}$$

$$\begin{aligned}C &= -9x^2 - 7 - 7x^2 + 6 + 6x - 7 \\ &= -9x^2 - 7x^2 - 7 - 1 + 6x \\ &= (-9 - 7) \times x^2 + 6x - 7 - 1 \\ &= -16x^2 + 6x - 8\end{aligned}$$

$$\begin{aligned}D &= -7x - 1 - 7x + 8 + 4x + 3x \\ &= -7x - 1 + 8 - 7x + (4 + 3) \times x \\ &= (-7 - 7) \times x + 7 + 7x \\ &= -14x + 7 + 7x \\ &= -14x + 7x + 7 \\ &= (-14 + 7) \times x + 7 \\ &= -7x + 7\end{aligned}$$

$$\begin{aligned}E &= 3x + 15 + 9x + 18x + 17 \\ &= 3x + 15 + (9 + 18) \times x + 17 \\ &= 3x + 15 + 17 + 27x \\ &= (3 + 27) \times x + 32 \\ &= 30x + 32\end{aligned}$$

$$\begin{aligned}F &= -4x - 5 + 4x + 1 \\ &= -4x - 5 + 4x + 1 \\ &= -4x + 4x - 5 + 1 \\ &= (-4 + 4) \times x - 4 \\ &= 0x - 4 \\ &= -4\end{aligned}$$

Solution 2

$$\begin{aligned}A &= 10(x + 3) \\ &= 10x + 10 \times 3 \\ &= 10x + 30\end{aligned}$$

$$\begin{aligned}B &= 8(-10x + 2) \\ &= 8 \times -10x + 8 \times 2 \\ &= 8(-10) \times x + 16 \\ &= -80x + 16\end{aligned}$$

$$\begin{aligned}C &= 3(-9x + 3) \\ &= 3 \times -9x + 3 \times 3 \\ &= 3(-9) \times x + 9 \\ &= -27x + 9\end{aligned}$$

$$\begin{aligned}D &= -10x(-6x + 3) \\ &= -10x \times -6x - 10x \times 3 \\ &= -10(-6) \times x^{1+1} + 3(-10) \times x \\ &= 60x^2 - 30x\end{aligned}$$

$$\begin{aligned}E &= 2x(10x - 2) - 4 \\ &= 2x \times 10x + 2x(-2) - 4 \\ &= 2 \times 10 \times x^{1+1} - 2 \times 2 \times x - 4 \\ &= 20x^2 - 4x - 4\end{aligned}$$

$$\begin{aligned}F &= -3x - 7x(-10x + 9) \\ &= -3x - 7x \times -10x - 7x \times 9 \\ &= -3x - 7(-10) \times x^{1+1} + 9(-7) \times x \\ &= -3x - 63x + 70x^2 \\ &= (-3 - 63) \times x + 70x^2 \\ &= 70x^2 - 66x\end{aligned}$$

Solution 3

$$\begin{aligned}A &= 10(x + 3) \\ &= 10x + 10 \times 3 \\ &= 10x + 30\end{aligned}$$

$$\begin{aligned}B &= 8(-10x + 2) \\ &= 8 \times -10x + 8 \times 2 \\ &= 8(-10) \times x + 16 \\ &= -80x + 16\end{aligned}$$

$$\begin{aligned}C &= 3(-9x + 3) \\ &= 3 \times -9x + 3 \times 3 \\ &= 3(-9) \times x + 9 \\ &= -27x + 9\end{aligned}$$

$$\begin{aligned}D &= -10x(-6x + 3) \\ &= -10x \times -6x - 10x \times 3 \\ &= -10(-6) \times x^{1+1} + 3(-10) \times x \\ &= 60x^2 - 30x\end{aligned}$$

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$$\begin{aligned}F &= -3x - 7x(-10x + 9) \\ &= -3x - 7x \times -10x - 7x \times 9 \\ &= -3x - 7(-10) \times x^{1+1} + 9(-7) \times x \\ &= -3x - 63x + 70x^2 \\ &= (-3 - 63) \times x + 70x^2 \\ &= 70x^2 - 66x\end{aligned}$$