

Corrige Test calcul littéral

①

Exercice 1

$$\begin{aligned} A &= 5(x+2) \\ &= 5x + 10 \\ &= \underline{5x + 10} \end{aligned}$$

$$\begin{aligned} B &= 3(6-x) \\ &= 3 \times 6 + 3 \times (-x) \\ &= \underline{18 - 3x} \end{aligned}$$

$$\begin{aligned} C &= -5(-x+2) \\ &= -5 \times (-x) + (-5) \times 2 \\ &= \underline{5x - 10} \end{aligned}$$

$$\begin{aligned} D &= (x+1)(3x+4) \\ &= x \times 3x + x \times 4 + 1 \times 3x + 1 \times 4 \\ &= 3x^2 + 4x + 3x + 4 \\ &= \underline{3x^2 + 7x + 4} \end{aligned}$$

$$\begin{aligned} E &= (-2x+5)(6-2x) \\ &= -2x \times 6 + (-2x) \times (-2x) + 5 \times 6 \\ &\quad + 5 \times (-2x) \\ &= -12x + 4x^2 + 30 - 10x \\ &= \underline{4x^2 - 22x + 30} \end{aligned}$$

$$\begin{aligned} F &= (x-4)(3x-6) \\ &= x \times 3x + x \times (-6) + (-4) \times 3x + (-4) \times (-6) \\ &= 3x^2 - 6x - 12x + 24 \\ &= \underline{3x^2 - 18x + 24} \end{aligned}$$

$$\begin{aligned} G &= 3(2x-5) + (2x-4) \\ &= 3 \times 2x + 3 \times (-5) + 2x - 4 \\ &= 6x - 15 + 2x - 4 \\ &= \underline{8x - 19} \end{aligned}$$

$$\begin{aligned} H &= -5(x-3) - 2(x+2) \\ &= -5 \times x + (-5) \times (-3) - 2 \times x + (-2) \times 2 \\ &= -7x + 15 - 2x - 4 \\ &= \underline{-12x + 11} \end{aligned}$$

Exercice 2

$$\begin{aligned} A &= (x+2)^2 \\ &= \underline{x^2 + 4x + 4} \end{aligned}$$

$$\begin{aligned} B &= (3-5x)^2 \\ &= 9 - 2 \times 3 \times 5x + 25x^2 \\ &= \underline{9 - 30x + 25x^2} \end{aligned}$$

$$\begin{aligned} C &= (x+5)(x-5) \\ &= \underline{x^2 - 25} \end{aligned}$$

$$\begin{aligned} D &= (2-x)(2+x) \\ &= \underline{4 - x^2} \end{aligned}$$

Exercício 3

$$\begin{aligned} A &= 2x + 4 \\ &= \underline{2x} + \underline{2} \times 2 \\ &= \underline{2(x+2)} \end{aligned}$$

$$\begin{aligned} B &= x^2 + 5x \\ &= \underline{x} \times \underline{x} + 5 \times \underline{x} \\ &= \underline{x(x+5)} \end{aligned}$$

$$\begin{aligned} C &= 12x - 12 \\ &= \underline{12} \times x - \underline{12} \times 1 \\ &= \underline{12(x-1)} \end{aligned}$$

$$\begin{aligned} D &= 4x - 16 \\ &= \underline{4} \times x - \underline{4} \times 4 \\ &= \underline{4(x-4)} \end{aligned}$$

Exercício 4

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

$$\begin{aligned} B &= 4x^2 + 12x + 9 \\ &= (2x)^2 + 12x + 3^2 \\ &= \underline{(2x+3)^2} \end{aligned}$$

$$\begin{aligned} C &= x^2 - 25 \\ &= \underline{(x+5)(x-5)} \end{aligned}$$

$$\begin{aligned} D &= 49 - 25x^2 \\ &= 7^2 - (5x)^2 \\ &= \underline{(7+5x)(7-5x)} \end{aligned}$$

Bonus.

$$\begin{aligned} A &= \underline{(2x+1)}(4x-3) + \underline{(2x+1)}(5-x) \\ &= (2x+1)(4x-3 + (5-x)) \\ &= (2x+1)(4x-3+5-x) \\ &= \underline{(2x+1)(3x+2)} \end{aligned}$$

$$\begin{aligned} B &= (6x+1)^2 - (3x-1)(6x+1) \\ &= (6x+1)(6x+1) - (3x-1)\underline{(6x+1)} \\ &= (6x+1)(6x+1 - (3x-1)) \\ &= (6x+1)(6x+1-3x+1) \\ &= \underline{(6x+1)(3x+2)} \end{aligned}$$