

Corrige Test calcul littéral

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Exercice 1

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

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

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

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

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

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

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

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

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.

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

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

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Exercice 1

$$\begin{aligned} A &= 5(x+5) \\ &= 5 \times x + 5 \times 5 \\ &= \underline{5x + 25} \end{aligned}$$

$$\begin{aligned} B &= 2(7-x) \\ &= 2 \times 7 - 2 \times x \\ &= \underline{14 - 2x} \end{aligned}$$

$$\begin{aligned} C &= -4(-x+3) \\ &= -4 \times (-x) + (-4) \times 3 \\ &= \underline{4x - 12} \end{aligned}$$

$$\begin{aligned} D &= (x+2)(2x+5) \\ &= x \times 2x + 2 \times 5 + 2 \times 2x + 2 \times 5 \\ &= 2x^2 + 5x + 4x + 10 \\ &= \underline{2x^2 + 9x + 10} \end{aligned}$$

$$\begin{aligned} E &= (-2x+3)(5-3x) \\ &= -2x \times 5 + (-2x) \times (-3x) + 3 \times 5 + 3 \times (-3x) \\ &= -10x + 6x^2 + 15 - 9x \\ &= \underline{6x^2 - 19x + 15} \end{aligned}$$

$$\begin{aligned} F &= (x-5)(2x-7) \\ &= x \times 2x + x \times (-7) + (-5) \times 2x + (-5) \times (-7) \\ &= 2x^2 - 7x - 10x + 35 \\ &= \underline{2x^2 - 17x + 35} \end{aligned}$$

$$\begin{aligned} G &= 4(2x-6) + (3x-4) \\ &= 4 \times 2x + 4 \times (-6) + 3x - 4 \\ &= 8x - 24 + 3x - 4 \\ &= \underline{11x - 28} \end{aligned}$$

$$\begin{aligned} H &= -4(x-2) - 2(x+4) \\ &= -4x + (-4) \times (-2) - 2 \times x + (-2) \times 4 \\ &= -4x + 8 - 2x - 8 \\ &= \underline{-6x} \end{aligned}$$

Exercice 2

$$\begin{aligned} 1) \quad A &= (x+3)^2 = x^2 + 2 \times x \times 3 + 3^2 \\ &= \underline{x^2 + 6x + 9} \end{aligned}$$

$$\begin{aligned} B &= (4-3x)^2 = 16 - 2 \times 4 \times 3x + (3x)^2 \\ &= \underline{16 - 24x + 9x^2} \end{aligned}$$

$$C = (x+7)(x-7) \\ = \underline{x^2 - 49}$$

$$D = (3-x)(3+x) \\ = \underline{9 - x^2}$$

Exercice 3

$$A = 5x + 15 \\ = \underline{5x + 5 \times 3} \\ = \underline{5(x+3)}$$

$$B = x^2 + 3x \\ = \underline{x \times x + 3 \times x} \\ = \underline{x(x+3)}$$

$$C = 8x - 8 \\ = \underline{8 \times x - 8 \times 1} \\ = \underline{8(x-1)}$$

$$D = 3x - 9 \\ = \underline{3 \times x - 3 \times 3} \\ = \underline{3(x-3)}$$

Exercice 4

$$A = x^2 - 4x + 4 \\ = x^2 - 4x + 2^2 \\ = \underline{(x-2)^2}$$

$$B = 4x^2 + 20x + 25 \\ = (2x)^2 + 20x + 5^2 \\ = \underline{(2x+5)^2}$$

$$C = x^2 - 36 \\ = x^2 - 6^2 \\ = \underline{(x+6)(x-6)}$$

$$D = 81 - 36x^2 \\ = 9^2 - (6x)^2 \\ = \underline{(9-6x)(9+6x)}$$