

Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 5x$$

$$A = x \times 5 \times x$$

$$A = 5 \times x \times x$$

$$\boxed{A = 5x^2}$$

$$B = 7x \times 3x$$

$$B = 7 \times x \times 3 \times x$$

$$B = 7 \times 3 \times x \times x$$

$$\boxed{B = 21x^2}$$

$$C = 5 + (-9x + 1) \times (-3x + 10)$$

$$C = 5 - 9x \times (-3x) - 9x \times 10 + 1 \times (-3x) + 1 \times 10$$

$$C = 5 - 9 \times x \times (-3) \times x - 9 \times x \times 10 + 1 \times (-3) \times x + 10$$

$$C = 5 - 9 \times (-3) \times x \times x - 9 \times 10 \times x - 3x + 10$$

$$C = 5 - (-27x^2) - 90x - 3x + 10$$

$$C = 27x^2 - 90x + 5 - 3x + 10$$

$$C = 27x^2 - 90x - 3x + 5 + 10$$

$$C = 27x^2 + (-90 - 3)x + 15$$

$$\boxed{C = 27x^2 - 93x + 15}$$

$$D = -5x^2 + (10x + 7) \times (3x - 5)$$

$$D = -5x^2 + 10x \times 3x + 10x \times (-5) + 7 \times 3x + 7 \times (-5)$$

$$D = -5x^2 + 10 \times x \times 3 \times x + 10 \times x \times (-5) + 7 \times 3 \times x - 35$$

$$D = -5x^2 + 10 \times 3 \times x \times x + 10 \times (-5) \times x + 21x - 35$$

$$D = -5x^2 + 30x^2 - 50x + 21x - 35$$

$$D = (-5 + 30)x^2 + (-50 + 21)x - 35$$

$$\boxed{D = 25x^2 - 29x - 35}$$

$$E = (8x - 9) \times (7x + 8) - 4x + 1$$

$$E = 8x \times 7x + 8x \times 8 - 9 \times 7x - 9 \times 8 - 4x + 1$$

$$E = 8 \times x \times 7 \times x + 8 \times x \times 8 - 9 \times 7 \times x - 72 - 4x + 1$$

$$E = 8 \times 7 \times x \times x + 8 \times 8 \times x - 63x - 4x - 72 + 1$$

$$E = 56x^2 + 64x - 63x - 4x - 72 + 1$$

$$E = 56x^2 + (64 + (-63) - 4)x - 71$$

$$\boxed{E = 56x^2 - 3x - 71}$$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$$A = 6x \times x$$

$$A = 6 \times x \times x$$

$$\boxed{A = 6x^2}$$

$$B = 9 \times x \times 3 \times x$$

$$B = 9 \times 3 \times x \times x$$

$$\boxed{B = 27x^2}$$

$$B = 9x \times 3x$$

$$C = -8x^2 + (x - 10) \times (x + 1)$$

$$C = -8x^2 + x \times x + x \times 1 - 10 \times x - 10 \times 1$$

$$C = -8x^2 + x^2 + x - 10x - 10$$

$$C = (-8 + 1)x^2 + (1 - 10)x - 10$$

$$\boxed{C = -7x^2 - 9x - 10}$$

$$\begin{aligned}
 D &= (-8x + 3) \times (-7x - 6) + 6x + 4 \\
 D &= -8x \times (-7x) - 8x \times (-6) + 3 \times (-7x) + 3 \times (-6) + 6x + 4 \\
 D &= -8 \times x \times (-7) \times x - 8 \times x \times (-6) + 3 \times (-7) \times x - 18 + 6x + 4 \\
 D &= -8 \times (-7) \times x \times x - 8 \times (-6) \times x - 21x + 6x - 18 + 4 \\
 D &= 56x^2 - (-48x) - 21x + 6x - 18 + 4 \\
 D &= 56x^2 + 48x - 21x + 6x - 18 + 4 \\
 D &= 56x^2 + (48 + (-21) + 6) x - 14 \\
 \boxed{D} &= \boxed{56x^2 + 33x - 14}
 \end{aligned}$$

$$\begin{aligned}
 E &= (-5x + 1) \times (x + 8) - 9 \\
 E &= -5x \times x - 5x \times 8 + 1 \times x + 1 \times 8 - 9 \\
 E &= -5 \times x \times x - 5 \times x \times 8 + x + 8 - 9 \\
 E &= -5x^2 - 5 \times 8 \times x + x - 1 \\
 E &= -5x^2 - 40x + x - 1 \\
 E &= -5x^2 + (-40 + 1) x - 1 \\
 \boxed{E} &= \boxed{-5x^2 - 39x - 1}
 \end{aligned}$$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

$ \begin{aligned} A &= 7x \times x \\ A &= 7 \times x \times x \\ \boxed{A} &= \boxed{7x^2} \end{aligned} $	$ \begin{aligned} B &= 3 \times x \times 3 \times x \\ B &= 3 \times 3 \times x \times x \\ \boxed{B} &= \boxed{9x^2} \end{aligned} $
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$$B = 3x \times 3x$$

$$\begin{aligned}
 C &= -6x^2 + (9x - 1) \times (-2x + 1) \\
 C &= -6x^2 + 9x \times (-2x) + 9x \times 1 - 1 \times (-2x) - 1 \times 1 \\
 C &= -6x^2 + 9 \times x \times (-2) \times x + 9 \times x \times 1 - 1 \times (-2) \times x - 1 \\
 C &= -6x^2 + 9 \times (-2) \times x \times x + 9 \times x + 2x - 1 \\
 C &= -6x^2 - 18x^2 + 9x + 2x - 1 \\
 C &= (-6 - 18) x^2 + (9 + 2) x - 1 \\
 \boxed{C} &= \boxed{-24x^2 + 11x - 1}
 \end{aligned}$$

$$\begin{aligned}
 D &= (9x - 8) \times (5x + 8) + 4 \\
 D &= 9x \times 5x + 9x \times 8 - 8 \times 5x - 8 \times 8 + 4 \\
 D &= 9 \times x \times 5 \times x + 9 \times x \times 8 - 8 \times 5 \times x - 64 + 4 \\
 D &= 9 \times 5 \times x \times x + 9 \times 8 \times x - 40x - 60 \\
 D &= 45x^2 + 72x - 40x - 60 \\
 D &= 45x^2 + (72 - 40) x - 60 \\
 \boxed{D} &= \boxed{45x^2 + 32x - 60}
 \end{aligned}$$

$$\begin{aligned}
 E &= (8x - 2) \times (-10x - 7) + 4x - 8 \\
 E &= 8x \times (-10x) + 8x \times (-7) - 2 \times (-10x) - 2 \times (-7) + 4x - 8 \\
 E &= 8 \times x \times (-10) \times x + 8 \times x \times (-7) - 2 \times (-10) \times x + 14 + 4x - 8 \\
 E &= 8 \times (-10) \times x \times x + 8 \times (-7) \times x + 20x + 4x + 14 - 8 \\
 E &= -80x^2 - 56x + (20 + 4) x + 6 \\
 E &= -80x^2 + (-56 + 20 + 4) x + 6 \\
 \boxed{E} &= \boxed{-80x^2 - 32x + 6}
 \end{aligned}$$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 5x$$

$$A = x \times 5 \times x$$

$$A = 5 \times x \times x$$

$$\boxed{A = 5x^2}$$

$$B = 6x \times 4x$$

$$B = 6 \times x \times 4 \times x$$

$$B = 6 \times 4 \times x \times x$$

$$\boxed{B = 24x^2}$$

$$C = -7 + (-9x + 6) \times (-x - 2)$$

$$C = -7 - 9x \times (-x) - 9x \times (-2) + 6 \times (-x) + 6 \times (-2)$$

$$C = -7 - 9 \times x \times (-1) \times x - 9 \times x \times (-2) + 6 \times (-1) \times x - 12$$

$$C = -7 - 9 \times (-1) \times x \times x - 9 \times (-2) \times x - 6x - 12$$

$$C = -7 - (-9x^2) - (-18x) - 6x - 12$$

$$C = 9x^2 + 18x - 7 - 6x - 12$$

$$C = 9x^2 + 18x - 6x - 7 - 12$$

$$C = 9x^2 + (18 - 6)x - 19$$

$$\boxed{C = 9x^2 + 12x - 19}$$

$$D = (10x - 4) \times (5x - 10) + 9x^2$$

$$D = 10x \times 5x + 10x \times (-10) - 4 \times 5x - 4 \times (-10) + 9x^2$$

$$D = 10 \times x \times 5 \times x + 10 \times x \times (-10) - 4 \times 5 \times x + 40 + 9x^2$$

$$D = 10 \times 5 \times x \times x + 10 \times (-10) \times x - 20x + 9x^2 + 40$$

$$D = 50x^2 - 100x + 9x^2 - 20x + 40$$

$$D = 50x^2 + 9x^2 - 100x - 20x + 40$$

$$D = (50 + 9)x^2 + (-100 - 20)x + 40$$

$$\boxed{D = 59x^2 - 120x + 40}$$

$$E = (6x + 5) \times (2x + 1) + x + 7$$

$$E = 6x \times 2x + 6x \times 1 + 5 \times 2x + 5 \times 1 + x + 7$$

$$E = 6 \times x \times 2 \times x + 6 \times x \times 1 + 5 \times 2 \times x + 5 + x + 7$$

$$E = 6 \times 2 \times x \times x + 6 \times x + 10x + x + 5 + 7$$

$$E = 12x^2 + 6x + (10 + 1)x + 12$$

$$E = 12x^2 + (6 + 10 + 1)x + 12$$

$$\boxed{E = 12x^2 + 17x + 12}$$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 5x$$

$$A = x \times 5 \times x$$

$$A = 5 \times x \times x$$

$$\boxed{A = 5x^2}$$

$$B = 6x \times 8x$$

$$B = 6 \times x \times 8 \times x$$

$$B = 6 \times 8 \times x \times x$$

$$\boxed{B = 48x^2}$$

$$C = x + 2 + (-8x - 8) \times (-2x - 8)$$

$$C = x + 2 - 8x \times (-2x) - 8x \times (-8) - 8 \times (-2x) - 8 \times (-8)$$

$$C = x + 2 - 8 \times x \times (-2) \times x - 8 \times x \times (-8) - 8 \times (-2) \times x + 64$$

$$C = x + 2 - 8 \times (-2) \times x \times x - 8 \times (-8) \times x + 16x + 64$$

$$C = x + 2 - (-16x^2) - (-64x) + 16x + 64$$

$$C = 16x^2 + x + 64x + 2 + 16x + 64$$

$$C = 16x^2 + x + 64x + 16x + 2 + 64$$

$$C = 16x^2 + (1 + 64 + 16)x + 66$$

$$C = 16x^2 + 81x + 66$$

$$D = (3x - 2) \times (6x + 6) + 6x^2$$

$$D = 3x \times 6x + 3x \times 6 - 2 \times 6x - 2 \times 6 + 6x^2$$

$$D = 3 \times x \times 6 \times x + 3 \times x \times 6 - 2 \times 6 \times x - 12 + 6x^2$$

$$D = 3 \times 6 \times x \times x + 3 \times 6 \times x - 12x + 6x^2 - 12$$

$$D = 18x^2 + 18x + 6x^2 - 12x - 12$$

$$D = 18x^2 + 6x^2 + 18x - 12x - 12$$

$$D = (18 + 6)x^2 + (18 - 12)x - 12$$

$$D = 24x^2 + 6x - 12$$

$$E = 2 + (9x + 5) \times (-7x + 7)$$

$$E = 2 + 9x \times (-7x) + 9x \times 7 + 5 \times (-7x) + 5 \times 7$$

$$E = 2 + 9 \times x \times (-7) \times x + 9 \times x \times 7 + 5 \times (-7) \times x + 35$$

$$E = 2 + 9 \times (-7) \times x \times x + 9 \times 7 \times x - 35x + 35$$

$$E = 2 - 63x^2 + 63x - 35x + 35$$

$$E = -63x^2 + 63x - 35x + 2 + 35$$

$$E = -63x^2 + (63 - 35)x + 37$$

$$E = -63x^2 + 28x + 37$$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

$$A = 4x \times x$$

$$A = 4 \times x \times x$$

$$A = 4x^2$$

$$B = 3 \times x \times 4 \times x$$

$$B = 3 \times 4 \times x \times x$$

$$B = 12x^2$$

$$B = 3x \times 4x$$

$$C = -2x + 4 + (-2x - 5) \times (-9x + 6)$$

$$C = -2x + 4 - 2x \times (-9x) - 2x \times 6 - 5 \times (-9x) - 5 \times 6$$

$$C = -2x + 4 - 2 \times x \times (-9) \times x - 2 \times x \times 6 - 5 \times (-9) \times x - 30$$

$$C = -2x + 4 - 2 \times (-9) \times x \times x - 2 \times 6 \times x + 45x - 30$$

$$C = -2x + 4 - (-18x^2) - 12x + 45x - 30$$

$$C = 18x^2 - 2x - 12x + 4 + 45x - 30$$

$$C = 18x^2 - 2x - 12x + 45x + 4 - 30$$

$$C = 18x^2 + (-2 - 12 + 45)x - 26$$

$$C = 18x^2 + 31x - 26$$

$$D = 4 + (-8x - 8) \times (-7x - 6)$$

$$D = 4 - 8x \times (-7x) - 8x \times (-6) - 8 \times (-7x) - 8 \times (-6)$$

$$D = 4 - 8 \times x \times (-7) \times x - 8 \times x \times (-6) - 8 \times (-7) \times x + 48$$

$$D = 4 - 8 \times (-7) \times x \times x - 8 \times (-6) \times x + 56x + 48$$

$$D = 4 - (-56x^2) - (-48x) + 56x + 48$$

$$D = 56x^2 + 48x + 4 + 56x + 48$$

$$D = 56x^2 + 48x + 56x + 4 + 48$$

$$D = 56x^2 + (48 + 56)x + 52$$

$$D = 56x^2 + 104x + 52$$

$$E = -4x^2 + (8x - 6) \times (10x - 4)$$

$$E = -4x^2 + 8x \times 10x + 8x \times (-4) - 6 \times 10x - 6 \times (-4)$$

$$E = -4x^2 + 8 \times x \times 10 \times x + 8 \times x \times (-4) - 6 \times 10 \times x + 24$$

$$E = -4x^2 + 8 \times 10 \times x \times x + 8 \times (-4) \times x - 60x + 24$$

$$E = -4x^2 + 80x^2 - 32x - 60x + 24$$

$$E = (-4 + 80) x^2 + (-32 - 60) x + 24$$

$E = 76x^2 - 92x + 24$
