

**Corrigé de l'exercice 1**

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 3x$$

$$A = x \times 3 \times x$$

$$A = 3 \times x \times x$$

$$\boxed{A = 3x^2}$$

$$B = 8x \times 9x$$

$$B = 8 \times x \times 9 \times x$$

$$B = 8 \times 9 \times x \times x$$

$$\boxed{B = 72x^2}$$

$$C = 5x + 10 + (3x + 4) \times (-3x + 3)$$

$$C = 5x + 10 + 3x \times (-3x) + 3x \times 3 + 4 \times (-3x) + 4 \times 3$$

$$C = 5x + 10 + 3 \times x \times (-3) \times x + 3 \times x \times 3 + 4 \times (-3) \times x + 12$$

$$C = 5x + 10 + 3 \times (-3) \times x \times x + 3 \times 3 \times x - 12x + 12$$

$$C = 5x + 10 - 9x^2 + 9x - 12x + 12$$

$$C = -9x^2 + 5x + 9x - 12x + 10 + 12$$

$$C = -9x^2 + (5 + 9 - 12)x + 22$$

$$\boxed{C = -9x^2 + 2x + 22}$$

$$D = (-8x + 2) \times (-5x - 1) - 8$$

$$D = -8x \times (-5x) - 8x \times (-1) + 2 \times (-5x) + 2 \times (-1) - 8$$

$$D = -8 \times x \times (-5) \times x - 8 \times x \times (-1) + 2 \times (-5) \times x - 2 - 8$$

$$D = -8 \times (-5) \times x \times x - 8 \times (-1) \times x - 10x - 10$$

$$D = 40x^2 - (-8x) - 10x - 10$$

$$D = 40x^2 + 8x - 10x - 10$$

$$D = 40x^2 + (8 - 10)x - 10$$

$$\boxed{D = 40x^2 - 2x - 10}$$

$$E = 3x^2 + (x - 8) \times (-5x + 6)$$

$$E = 3x^2 + x \times (-5x) + x \times 6 - 8 \times (-5x) - 8 \times 6$$

$$E = 3x^2 + x \times (-5) \times x + 6 \times x - 8 \times (-5) \times x - 48$$

$$E = 3x^2 - 5 \times x \times x + 6x + 40x - 48$$

$$E = 3x^2 - 5x^2 + (6 + 40)x - 48$$

$$E = (3 - 5)x^2 + (6 + 40)x - 48$$

$$\boxed{E = -2x^2 + 46x - 48}$$

**Corrigé de l'exercice 2**

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 3x$$

$$A = x \times 3 \times x$$

$$A = 3 \times x \times x$$

$$\boxed{A = 3x^2}$$

$$B = 8x \times 7x$$

$$B = 8 \times x \times 7 \times x$$

$$B = 8 \times 7 \times x \times x$$

$$\boxed{B = 56x^2}$$

$$C = (7x - 10) \times (x - 6) + 2x - 9$$

$$C = 7x \times x + 7x \times (-6) - 10 \times x - 10 \times (-6) + 2x - 9$$

$$C = 7 \times x \times x + 7 \times x \times (-6) - 10x + 60 + 2x - 9$$

$$C = 7x^2 + 7 \times (-6) \times x - 10x + 2x + 60 - 9$$

$$C = 7x^2 - 42x - 10x + 2x + 60 - 9$$

$$C = 7x^2 + (-42 - 10 + 2)x + 51$$

$$C = 7x^2 - 50x + 51$$

$$D = (9x + 6) \times (-7x + 10) - 6x^2$$

$$D = 9x \times (-7x) + 9x \times 10 + 6 \times (-7x) + 6 \times 10 - 6x^2$$

$$D = 9 \times x \times (-7) \times x + 9 \times x \times 10 + 6 \times (-7) \times x + 60 - 6x^2$$

$$D = 9 \times (-7) \times x \times x + 9 \times 10 \times x - 42x - 6x^2 + 60$$

$$D = -63x^2 + 90x - 6x^2 - 42x + 60$$

$$D = -63x^2 - 6x^2 + 90x - 42x + 60$$

$$D = (-63 - 6)x^2 + (90 - 42)x + 60$$

$$D = -69x^2 + 48x + 60$$

$$E = (6x - 6) \times (-5x - 9) + 7$$

$$E = 6x \times (-5x) + 6x \times (-9) - 6 \times (-5x) - 6 \times (-9) + 7$$

$$E = 6 \times x \times (-5) \times x + 6 \times x \times (-9) - 6 \times (-5) \times x + 54 + 7$$

$$E = 6 \times (-5) \times x \times x + 6 \times (-9) \times x + 30x + 61$$

$$E = -30x^2 - 54x + 30x + 61$$

$$E = -30x^2 + (-54 + 30)x + 61$$

$$E = -30x^2 - 24x + 61$$

### Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

$$A = 3x \times x$$

$$A = 3 \times x \times x$$

$$A = 3x^2$$

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

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

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

$$B = 21x^2$$

$$C = (4x + 1) \times (-9x - 6) + 8$$

$$C = 4x \times (-9x) + 4x \times (-6) + 1 \times (-9x) + 1 \times (-6) + 8$$

$$C = 4 \times x \times (-9) \times x + 4 \times x \times (-6) + 1 \times (-9) \times x - 6 + 8$$

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

$$C = -36x^2 - 24x - 9x + 2$$

$$C = -36x^2 + (-24 - 9)x + 2$$

$$C = -36x^2 - 33x + 2$$

$$D = 2x^2 + (-x - 8) \times (x - 4)$$

$$D = 2x^2 - x \times x - x \times (-4) - 8 \times x - 8 \times (-4)$$

$$D = 2x^2 - 1 \times x \times x - 1 \times x \times (-4) - 8x + 32$$

$$D = 2x^2 - x^2 - 1 \times (-4) \times x - 8x + 32$$

$$D = (2 - 1)x^2 - (-4x) - 8x + 32$$

$$D = x^2 - (-4x) - 8x + 32$$

$$D = x^2 + 4x - 8x + 32$$

$$D = x^2 + (4 - 8)x + 32$$

$$D = x^2 - 4x + 32$$

$$E = (-2x + 4) \times (-8x - 2) + x - 1$$

$$E = -2x \times (-8x) - 2x \times (-2) + 4 \times (-8x) + 4 \times (-2) + x - 1$$

$$E = -2 \times x \times (-8) \times x - 2 \times x \times (-2) + 4 \times (-8) \times x - 8 + x - 1$$

$$E = -2 \times (-8) \times x \times x - 2 \times (-2) \times x - 32x + x - 8 - 1$$

$$E = 16x^2 - (-4x) + (-32 + 1)x - 9$$

$$E = 16x^2 + 4x + (-32 + 1)x - 9$$

$$E = 16x^2 + (4 + (-32) + 1)x - 9$$

$$E = 16x^2 - 27x - 9$$

### Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \times 4x$$

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

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

$$A = 4x^2$$

$$B = 6x \times 9x$$

$$B = 6 \times x \times 9 \times x$$

$$B = 6 \times 9 \times x \times x$$

$$B = 54x^2$$

$$C = -10x^2 + (-6x - 8) \times (5x - 4)$$

$$C = -10x^2 - 6x \times 5x - 6x \times (-4) - 8 \times 5x - 8 \times (-4)$$

$$C = -10x^2 - 6 \times x \times 5 \times x - 6 \times x \times (-4) - 8 \times 5 \times x + 32$$

$$C = -10x^2 - 6 \times 5 \times x \times x - 6 \times (-4) \times x - 40x + 32$$

$$C = -10x^2 - 30x^2 - (-24x) - 40x + 32$$

$$C = -40x^2 + 24x - 40x + 32$$

$$C = -40x^2 + (24 - 40)x + 32$$

$$C = -40x^2 - 16x + 32$$

$$D = (6x + 9) \times (-9x + 8) - 7$$

$$D = 6x \times (-9x) + 6x \times 8 + 9 \times (-9x) + 9 \times 8 - 7$$

$$D = 6 \times x \times (-9) \times x + 6 \times x \times 8 + 9 \times (-9) \times x + 72 - 7$$

$$D = 6 \times (-9) \times x \times x + 6 \times 8 \times x - 81x + 65$$

$$D = -54x^2 + 48x - 81x + 65$$

$$D = -54x^2 + (48 - 81)x + 65$$

$$D = -54x^2 - 33x + 65$$

$$E = -7x + 3 + (4x - 2) \times (10x + 8)$$

$$E = -7x + 3 + 4x \times 10x + 4x \times 8 - 2 \times 10x - 2 \times 8$$

$$E = -7x + 3 + 4 \times x \times 10 \times x + 4 \times x \times 8 - 2 \times 10 \times x - 16$$

$$E = -7x + 3 + 4 \times 10 \times x \times x + 4 \times 8 \times x - 20x - 16$$

$$E = -7x + 3 + 40x^2 + 32x - 20x - 16$$

$$E = 40x^2 - 7x + 32x - 20x + 3 - 16$$

$$E = 40x^2 + (-7 + 32 - 20)x - 13$$

$$E = 40x^2 + 5x - 13$$

### Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

$$A = 7x \times x$$

$$A = 7 \times x \times x$$

$$A = 7x^2$$

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

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

$$B = 21x^2$$

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

$$\begin{aligned}
 C &= (-3x + 5) \times (-4x + 10) + 2x^2 \\
 C &= -3x \times (-4x) - 3x \times 10 + 5 \times (-4x) + 5 \times 10 + 2x^2 \\
 C &= -3 \times x \times (-4) \times x - 3 \times x \times 10 + 5 \times (-4) \times x + 50 + 2x^2 \\
 C &= -3 \times (-4) \times x \times x - 3 \times 10 \times x - 20x + 2x^2 + 50 \\
 C &= 12x^2 - 30x + 2x^2 - 20x + 50 \\
 C &= 12x^2 + 2x^2 - 30x - 20x + 50 \\
 C &= (12 + 2)x^2 + (-30 - 20)x + 50
 \end{aligned}$$

$$C = 14x^2 - 50x + 50$$

$$\begin{aligned}
 D &= 5 + (x - 1) \times (2x + 9) \\
 D &= 5 + x \times 2x + x \times 9 - 1 \times 2x - 1 \times 9 \\
 D &= 5 + x \times 2 \times x + 9 \times x - 1 \times 2 \times x - 9 \\
 D &= 5 + 2 \times x \times x + 9x - 2x - 9 \\
 D &= 5 + 2x^2 + (9 - 2)x - 9 \\
 D &= 2x^2 + (9 - 2)x + 5 - 9 \\
 D &= 2x^2 + (9 - 2)x - 4
 \end{aligned}$$

$$D = 2x^2 + 7x - 4$$

$$\begin{aligned}
 E &= (-7x + 7) \times (7x + 1) + 9x - 9 \\
 E &= -7x \times 7x - 7x \times 1 + 7 \times 7x + 7 \times 1 + 9x - 9 \\
 E &= -7 \times x \times 7 \times x - 7 \times x \times 1 + 7 \times 7 \times x + 7 + 9x - 9 \\
 E &= -7 \times 7 \times x \times x - 7 \times x + 49x + 9x + 7 - 9 \\
 E &= -49x^2 - 7x + (49 + 9)x - 2 \\
 E &= -49x^2 + (-7 + 49 + 9)x - 2
 \end{aligned}$$

$$E = -49x^2 + 51x - 2$$

### Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

$$\begin{aligned}
 A &= x \times 5x \\
 A &= x \times 5 \times x \\
 A &= 5 \times x \times x \\
 A &= 5x^2
 \end{aligned}$$

$$\begin{aligned}
 B &= 6x \times 7x \\
 B &= 6 \times x \times 7 \times x \\
 B &= 6 \times 7 \times x \times x \\
 B &= 42x^2
 \end{aligned}$$

$$\begin{aligned}
 C &= 6x^2 + (-x - 6) \times (-3x + 3) \\
 C &= 6x^2 - x \times (-3x) - x \times 3 - 6 \times (-3x) - 6 \times 3 \\
 C &= 6x^2 - 1 \times x \times (-3) \times x - 1 \times x \times 3 - 6 \times (-3) \times x - 18 \\
 C &= 6x^2 - 1 \times (-3) \times x \times x - 1 \times 3 \times x + 18x - 18 \\
 C &= 6x^2 - (-3x^2) - 3x + 18x - 18 \\
 C &= 9x^2 - 3x + 18x - 18 \\
 C &= 9x^2 + (-3 + 18)x - 18 \\
 C &= 9x^2 + 15x - 18
 \end{aligned}$$

$$\begin{aligned}
 D &= (10x + 10) \times (4x + 5) + 10x - 1 \\
 D &= 10x \times 4x + 10x \times 5 + 10 \times 4x + 10 \times 5 + 10x - 1 \\
 D &= 10 \times x \times 4 \times x + 10 \times x \times 5 + 10 \times 4 \times x + 50 + 10x - 1 \\
 D &= 10 \times 4 \times x \times x + 10 \times 5 \times x + 40x + 10x + 50 - 1 \\
 D &= 40x^2 + 50x + (40 + 10)x + 49 \\
 D &= 40x^2 + (50 + 40 + 10)x + 49
 \end{aligned}$$

$$D = 40x^2 + 100x + 49$$

$$E = 9 + (x - 2) \times (8x + 9)$$

$$E = 9 + x \times 8x + x \times 9 - 2 \times 8x - 2 \times 9$$

$$E = 9 + x \times 8 \times x + 9 \times x - 2 \times 8 \times x - 18$$

$$E = 9 + 8 \times x \times x + 9x - 16x - 18$$

$$E = 9 + 8x^2 + (9 - 16)x - 18$$

$$E = 8x^2 + (9 - 16)x + 9 - 18$$

$$E = 8x^2 + (9 - 16)x - 9$$

$$E = 8x^2 - 7x - 9$$