

Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$$A = 2x \cdot 3$$

$$A = 2 \cdot x \cdot 3$$

$$A = 2 \cdot 3 \cdot x$$

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

$$B = 3 \cdot 6x$$

$$B = 3 \cdot 6 \cdot x$$

$$\boxed{B = 18x}$$

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

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

$$C = 3x + 3 + 10 \cdot (-1) \cdot x - 40$$

$$C = 3x + 3 - 10x - 40$$

$$C = 3x - 10x + 3 - 40$$

$$C = (3 - 10)x - 37$$

$$\boxed{C = -7x - 37}$$

$$D = -8 + (5x + 8) \cdot 6$$

$$D = -8 + 5x \cdot 6 + 8 \cdot 6$$

$$D = -8 + 5 \cdot x \cdot 6 + 48$$

$$D = -8 + 5 \cdot 6 \cdot x + 48$$

$$D = -8 + 30x + 48$$

$$D = 30x - 8 + 48$$

$$\boxed{D = 30x + 40}$$

$$E = 9 \cdot (5x - 4) + 7x$$

$$E = 9 \cdot 5x + 9 \cdot (-4) + 7x$$

$$E = 9 \cdot 5 \cdot x - 36 + 7x$$

$$E = 45x + 7x - 36$$

$$E = (45 + 7)x - 36$$

$$\boxed{E = 52x - 36}$$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$$A = x \cdot 3x$$

$$A = x \cdot 3 \cdot x$$

$$A = 3 \cdot x \cdot x$$

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

$$B = 8x \cdot 8x$$

$$B = 8 \cdot x \cdot 8 \cdot x$$

$$B = 8 \cdot 8 \cdot x \cdot x$$

$$\boxed{B = 64x^2}$$

$$C = (-8x + 3) \cdot (-4x - 8) + 10$$

$$C = -8x \cdot (-4x) - 8x \cdot (-8) + 3 \cdot (-4x) + 3 \cdot (-8) + 10$$

$$C = -8 \cdot x \cdot (-4) \cdot x - 8 \cdot x \cdot (-8) + 3 \cdot (-4) \cdot x - 24 + 10$$

$$C = -8 \cdot (-4) \cdot x \cdot x - 8 \cdot (-8) \cdot x - 12x - 14$$

$$C = 32x^2 - (-64x) - 12x - 14$$

$$C = 32x^2 + 64x - 12x - 14$$

$$C = 32x^2 + (64 - 12)x - 14$$

$$\boxed{C = 32x^2 + 52x - 14}$$

$$D = (-3x + 3) \cdot (-7x + 8) + 10x - 8$$

$$D = -3x \cdot (-7x) - 3x \cdot 8 + 3 \cdot (-7x) + 3 \cdot 8 + 10x - 8$$

$$D = -3 \cdot x \cdot (-7) \cdot x - 3 \cdot x \cdot 8 + 3 \cdot (-7) \cdot x + 24 + 10x - 8$$

$$D = -3 \cdot (-7) \cdot x \cdot x - 3 \cdot 8 \cdot x - 21x + 10x + 24 - 8$$

$$D = 21x^2 - 24x(-21 + 10)x + 16$$

$$D = 21x^2 + (-24 + (-21) + 10)x + 16$$

$$\boxed{D = 21x^2 - 35x + 16}$$

$$E = (-x + 8) \cdot (3x + 1) - x^2$$

$$E = -x \cdot 3x - x \cdot 1 + 8 \cdot 3x + 8 \cdot 1 - x^2$$

$$E = -1 \cdot x \cdot 3 \cdot x - 1 \cdot x \cdot 1 + 8 \cdot 3 \cdot x + 8 - x^2$$

$$E = -1 \cdot 3 \cdot x \cdot x - 1 \cdot x + 24x - x^2 + 8$$

$$E = -3x^2 - x - x^2 + 24x + 8$$

$$E = -3x^2 - x^2 - x + 24x + 8$$

$$E = (-3 - 1)x^2 + (-1 + 24)x + 8$$

$$E = -4x^2 + 23x + 8$$

Corrigé de l'exercice 3

Réduire, si possible, les expressions suivantes :

►1. $A = 2a^2 \cdot (-4)$

$$A = 2 \cdot a^2 \cdot (-4)$$

$$A = 2 \cdot (-4) \cdot a^2$$

$$A = -8a^2$$

►2. $B = 6x^2 \cdot 2$

$$B = 6 \cdot x^2 \cdot 2$$

$$B = 6 \cdot 2 \cdot x^2$$

$$B = 12x^2$$

►3. $C = -2a \cdot 5$

$$C = -2 \cdot a \cdot 5$$

$$C = -2 \cdot 5 \cdot a$$

$$C = -10a$$

►4. $D = 8a \cdot (-9)$

$$D = 8 \cdot a \cdot (-9)$$

$$D = 8 \cdot (-9) \cdot a$$

$$D = -72a$$

►5. $E = 7a^2 \cdot 7$

$$E = 7 \cdot a^2 \cdot 7$$

$$E = 7 \cdot 7 \cdot a^2$$

$$E = 49a^2$$

►6. $F = -7t + 4t$

$$F = (-7 + 4)t$$

$$F = -3t$$

►7. $G = -5y \cdot (-4)$

$$G = -5 \cdot y \cdot (-4)$$

$$G = -5 \cdot (-4) \cdot y$$

$$G = 20y$$

►8. $H = 10y - 2y$

$$H = (10 - 2)y$$

$$H = 8y$$

►9. $I = -5 \cdot 10y^2$

$$I = -5 \cdot 10 \cdot y^2$$

$$I = -50y^2$$

Corrigé de l'exercice 4

Réduire chacune des expressions littérales suivantes :

$$A = -4x - 8 + (7x + 2)$$

$$A = -4x - 8 + 7x + 2$$

$$A = -4x + 7x - 8 + 2$$

$$A = (-4 + 7)x - 6$$

$$A = 3x - 6$$

$$B = -(5x + 5) - 2x + 7$$

$$B = -5x - 5 - 2x + 7$$

$$B = -5x - 2x - 5 + 7$$

$$B = (-5 - 2)x + 2$$

$$B = -7x + 2$$

$$C = -(-7x - 1) + 9 - 9x$$

$$C = 7x + 1 + 9 - 9x$$

$$C = 7x - 9x + 1 + 9$$

$$C = (7 - 9)x + 10$$

$$C = -2x + 10$$

$$D = (-2x + 5) - 5 - 4x$$

$$D = -2x + 5 - 4x - 5$$

$$D = -2x - 4x + 5 - 5$$

$$D = (-2 - 4)x$$

$$D = -6x$$

$$E = -3x - 5 - (3x + 7)$$

$$E = -3x - 5 - 3x - 7$$

$$E = -3x - 3x - 5 - 7$$

$$E = (-3 - 3)x - 12$$

$$E = -6x - 12$$

$$F = 6 - 8x - (7x + 6)$$

$$F = -8x + 6 - (7x + 6)$$

$$F = -8x + 6 - 7x - 6$$

$$F = -8x - 7x + 6 - 6$$

$$F = (-8 - 7)x$$

$$F = -15x$$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

$$A = (5x + 2)^2$$

$$A = (5x)^2 + 2 \cdot 5x \cdot 2 + 2^2$$

$$A = 25x^2 + 20x + 4$$

$$B = (4x - 6) \cdot (4x + 6)$$

$$B = (4x)^2 - 6^2$$

$$B = 16x^2 - 36$$

$$C = (6x - 7) \cdot (7x + 6)$$

$$C = 6x \cdot 7x + 6x \cdot 6 - 7 \cdot 7x - 7 \cdot 6$$

$$C = 42x^2 + 36x - 49x - 42$$

$$C = 42x^2 + (36 - 49)x - 42$$

$$C = 42x^2 - 13x - 42$$

$$D = (9x - 2)^2$$

$$D = (9x)^2 - 2 \cdot 9x \cdot 2 + 2^2$$

$$D = 81x^2 - 36x + 4$$

$$E = -(8x + 5)^2$$

$$E = -\left((8x)^2 + 2 \cdot 8x \cdot 5 + 5^2\right)$$

$$E = -(64x^2 + 80x + 25)$$

$$E = -64x^2 - 80x - 25$$

$$F = \left(\frac{4}{5}x - \frac{10}{9}\right) \cdot \left(\frac{10}{9}x + \frac{4}{5}\right)$$

$$F = \frac{4}{5}x \cdot \frac{10}{9}x + \frac{4}{5}x \cdot \frac{4}{5} + -\frac{10}{9} \cdot \frac{10}{9}x + -\frac{10}{9} \cdot \frac{4}{5}$$

$$F = \frac{8 \cdot 5}{9 \cdot 5}x^2 + \frac{16}{25}x + -\frac{100}{81}x + -\frac{8 \cdot 5}{9 \cdot 5}$$

$$F = \frac{8 \cdot 5}{9 \cdot 5}x^2 + \left(\frac{16}{25} - \frac{100}{81}\right)x - \frac{8 \cdot 5}{9 \cdot 5}$$

$$F = \frac{8}{9}x^2 + \left(\frac{16 \cdot 81}{25 \cdot 81} - \frac{100 \cdot 25}{81 \cdot 25}\right)x - \frac{8}{9}$$

$$F = \frac{8}{9}x^2 + \left(\frac{1296}{2025} - \frac{2500}{2025}\right)x - \frac{8}{9}$$

$$F = \frac{8}{9}x^2 - \frac{1204}{2025}x - \frac{8}{9}$$