Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$A = 9 \cdot 6\,x$
$A = 9 \cdot 6 \cdot x$
$\boxed{A = 54\,x}$

$B = 4 \cdot 2\,x$
$B = 4 \cdot 2 \cdot x$
$\boxed{B = 8\,x}$

$C = 9\,x + 6 + (-10\,x - 1) \cdot 3$
$C = 9\,x + 6 - 10\,x \cdot 3 - 1 \cdot 3$
$C = 9\,x + 6 - 10 \cdot x \cdot 3 - 3$
$C = 9\,x + 6 - 10 \cdot 3 \cdot x - 3$
$C = 9\,x + 6 - 30\,x - 3$
$C = 9\,x - 30\,x + 6 - 3$
$C = (9 - 30)\ x + 3$
$\boxed{C = -21\,x + 3}$

$D = (2\,x - 10) \cdot 8 + 10$
$D = 2\,x \cdot 8 - 10 \cdot 8 + 10$
$D = 2 \cdot x \cdot 8 - 80 + 10$
$D = 2 \cdot 8 \cdot x - 70$
$\boxed{D = 16\,x - 70}$

$E = (9\,x - 7) \cdot 3 - 6\,x$
$E = 9\,x \cdot 3 - 7 \cdot 3 - 6\,x$
$E = 9 \cdot x \cdot 3 - 21 - 6\,x$
$E = 9 \cdot 3 \cdot x - 6\,x - 21$
$E = 27\,x - 6\,x - 21$
$E = (27 - 6)\ x - 21$
$\boxed{E = 21\,x - 21}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$A = x \cdot 4\,x$
$A = x \cdot 4 \cdot x$
$A = 4 \cdot x \cdot x$
$\boxed{A = 4\,x^2}$

$B = 5\,x \cdot 5\,x$
$B = 5 \cdot x \cdot 5 \cdot x$
$B = 5 \cdot 5 \cdot x \cdot x$
$\boxed{B = 25\,x^2}$

$C = 10\,x^2 + (-x + 9) \cdot (7\,x + 3)$
$C = 10\,x^2 - x \cdot 7\,x - x \cdot 3 + 9 \cdot 7\,x + 9 \cdot 3$
$C = 10\,x^2 - 1 \cdot x \cdot 7 \cdot x - 1 \cdot x \cdot 3 + 9 \cdot 7 \cdot x + 27$
$C = 10\,x^2 - 1 \cdot 7 \cdot x \cdot x - 1 \cdot 3 \cdot x + 63\,x + 27$
$C = 10\,x^2 - 7\,x^2 - 3\,x + 63\,x + 27$
$C = 3\,x^2 - 3\,x + 63\,x + 27$
$C = 3\,x^2 + (-3 + 63)\ x + 27$
$\boxed{C = 3\,x^2 + 60\,x + 27}$

$D = (-9\,x - 9) \cdot (4\,x + 8) + 1$
$D = -9\,x \cdot 4\,x - 9\,x \cdot 8 - 9 \cdot 4\,x - 9 \cdot 8 + 1$
$D = -9 \cdot x \cdot 4 \cdot x - 9 \cdot x \cdot 8 - 9 \cdot 4 \cdot x - 72 + 1$
$D = -9 \cdot 4 \cdot x \cdot x - 9 \cdot 8 \cdot x - 36\,x - 71$
$D = -36\,x^2 - 72\,x - 36\,x - 71$
$D = -36\,x^2 + (-72 - 36)\ x - 71$
$\boxed{D = -36\,x^2 - 108\,x - 71}$

$E = -10\,x + 1 + (-2\,x - 8) \cdot (4\,x + 4)$
$E = -10\,x + 1 - 2\,x \cdot 4\,x - 2\,x \cdot 4 - 8 \cdot 4\,x - 8 \cdot 4$
$E = -10\,x + 1 - 2 \cdot x \cdot 4 \cdot x - 2 \cdot x \cdot 4 - 8 \cdot 4 \cdot x - 32$
$E = -10\,x + 1 - 2 \cdot 4 \cdot x \cdot x - 2 \cdot 4 \cdot x - 32\,x - 32$
$E = -10\,x + 1 - 8\,x^2 - 8\,x - 32\,x - 32$
$E = -8\,x^2 - 10\,x - 8\,x + 1 - 32\,x - 32$

$E = -8\,x^2 - 10\,x - 8\,x - 32\,x + 1 - 32$
$E = -8\,x^2 + (-10 - 8 - 32)\ x - 31$
$\boxed{E = -8\,x^2 - 50\,x - 31}$

Corrigé de l'exercice 3

Réduire, si possible, les expressions suivantes :

▶1. $A = -6\,t^2 - (-2\,t^2)$
$A = (-6 + 2)\ t^2$
$A = -4\,t^2$

▶2. $B = -10\,t - (-7\,t)$
$B = (-10 + 7)\ t$
$B = -3\,t$

▶3. $C = -10 \cdot x^2$
$C = -10\,x^2$

▶4. $D = 2\,a^2 - 2\,a^2$
$D = (2 - 2)\ a^2$
$D = 0$

▶5. $E = -7\,y - (-2\,y)$
$E = (-7 + 2)\ y$
$E = -5\,y$

▶6. $F = -3\,y^2 - y^2$
$F = (-3 - 1)\ y^2$
$F = -4\,y^2$

▶7. $G = -2 \cdot 3\,t$
$G = -2 \cdot 3 \cdot t$
$G = -6\,t$

▶8. $H = 7\,t^2 - 7\,t^2$
$H = (7 - 7)\ t^2$
$H = 0$

▶9. $I = 4\,y^2 - (-2\,y^2)$
$I = (4 + 2)\ y^2$
$I = 6\,y^2$

Corrigé de l'exercice 4

Réduire chacune des expressions littérales suivantes :

$A = 4 + 7\,x + (-10\,x + 10)$
$A = 7\,x + 4 - 10\,x + 10$
$A = 7\,x - 10\,x + 4 + 10$
$A = (7 - 10)\ x + 14$
$\boxed{A = -3\,x + 14}$

$B = (2\,x + 7) - 7\,x - 10$
$B = 2\,x + 7 - 7\,x - 10$
$B = 2\,x - 7\,x + 7 - 10$
$B = (2 - 7)\ x - 3$
$\boxed{B = -5\,x - 3}$

$C = -\,(8\,x - 5) - 5\,x - 3$
$C = -8\,x + 5 - 5\,x - 3$
$C = -8\,x - 5\,x + 5 - 3$
$C = (-8 - 5)\ x + 2$
$\boxed{C = -13\,x + 2}$

$D = 10\,x - (10\,x + 4) - 8$
$D = 10\,x - 10\,x - 4 - 8$
$D = (10 - 10)\ x - 12$
$\boxed{D = -12}$

$E = -2\,x + 9 - (3\,x - 4)$
$E = -2\,x + 9 - 3\,x + 4$
$E = -2\,x - 3\,x + 9 + 4$
$E = (-2 - 3)\ x + 13$
$\boxed{E = -5\,x + 13}$

$F = -10 - 9\,x - (-x + 4)$
$F = -9\,x - 10 - (-x + 4)$
$F = -9\,x - 10 + x - 4$
$F = -9\,x + x - 10 - 4$
$F = (-9 + 1)\ x - 14$
$\boxed{F = -8\,x - 14}$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

$A = (2\,x - 10)^2$
$A = (2\,x)^2 - 2 \cdot 2\,x \cdot 10 + 10^2$
$\boxed{A = 4\,x^2 - 40\,x + 100}$

$B = (4\,x - 7) \cdot (4\,x + 7)$
$B = (4\,x)^2 - 7^2$
$\boxed{B = 16\,x^2 - 49}$

$C = (2\,x + 9)^2$
$C = (2\,x)^2 + 2 \cdot 2\,x \cdot 9 + 9^2$
$\boxed{C = 4\,x^2 + 36\,x + 81}$

$D = (8\,x - 8) \cdot (8\,x + 8)$
$D = (8\,x)^2 - 8^2$
$\boxed{D = 64\,x^2 - 64}$

$E = \left(\frac{6}{5}\,x - \frac{2}{7}\right)^2$
$E = \left(\frac{6}{5}\,x\right)^2 - 2 \cdot \frac{6}{5}\,x \cdot \frac{2}{7} + \left(\frac{2}{7}\right)^2$
$\boxed{E = \frac{36}{25}\,x^2 - \frac{24}{35}\,x + \frac{4}{49}}$

$F = -\,(5\,x + 1)^2$
$F = -\left((5\,x)^2 + 2 \cdot 5\,x \cdot 1 + 1^2\right)$
$F = -\left(25\,x^2 + 10\,x + 1\right)$
$\boxed{F = -25\,x^2 - 10\,x - 1}$