Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$A = 8\,x \times x$
$A = 8 \times x \times x$
$\boxed{A = 8\,x^2}$

$B = 2\,x \times 3\,x$

$B = 2 \times x \times 3 \times x$
$B = 2 \times 3 \times x \times x$
$\boxed{B = 6\,x^2}$

$C = 8\,x - 9 + (8\,x - 3) \times (4\,x + 6)$
$C = 8\,x - 9 + 8\,x \times 4\,x + 8\,x \times 6 - 3 \times 4\,x - 3 \times 6$
$C = 8\,x - 9 + 8 \times x \times 4 \times x + 8 \times x \times 6 - 3 \times 4 \times x - 18$
$C = 8\,x - 9 + 8 \times 4 \times x \times x + 8 \times 6 \times x - 12\,x - 18$
$C = 8\,x - 9 + 32\,x^2 + 48\,x - 12\,x - 18$
$C = 32\,x^2 + 8\,x + 48\,x - 12\,x - 9 - 18$
$C = 32\,x^2 + (8 + 48 - 12)\,x - 27$
$\boxed{C = 32\,x^2 + 44\,x - 27}$

$D = (-10\,x + 2) \times (-6\,x - 7) + 2$
$D = -10\,x \times (-6\,x) - 10\,x \times (-7) + 2 \times (-6\,x) + 2 \times (-7) + 2$
$D = -10 \times x \times (-6) \times x - 10 \times x \times (-7) + 2 \times (-6) \times x - 14 + 2$
$D = -10 \times (-6) \times x \times x - 10 \times (-7) \times x - 12\,x - 12$
$D = 60\,x^2 - (-70\,x) - 12\,x - 12$
$D = 60\,x^2 + 70\,x - 12\,x - 12$
$D = 60\,x^2 + (70 - 12)\,x - 12$
$\boxed{D = 60\,x^2 + 58\,x - 12}$

$E = 4\,x^2 + (-3\,x + 4) \times (-3\,x + 7)$
$E = 4\,x^2 - 3\,x \times (-3\,x) - 3\,x \times 7 + 4 \times (-3\,x) + 4 \times 7$
$E = 4\,x^2 - 3 \times x \times (-3) \times x - 3 \times x \times 7 + 4 \times (-3) \times x + 28$
$E = 4\,x^2 - 3 \times (-3) \times x \times x - 3 \times 7 \times x - 12\,x + 28$
$E = 4\,x^2 - (-9\,x^2) - 21\,x - 12\,x + 28$
$E = 13\,x^2 - 21\,x - 12\,x + 28$
$E = 13\,x^2 + (-21 - 12)\,x + 28$
$\boxed{E = 13\,x^2 - 33\,x + 28}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$A = 7\,x \times x$
$A = 7 \times x \times x$
$\boxed{A = 7\,x^2}$

$B = 5\,x \times 6\,x$

$B = 5 \times x \times 6 \times x$
$B = 5 \times 6 \times x \times x$
$\boxed{B = 30\,x^2}$

$C = (6\,x - 9) \times (-10\,x - 8) + 6\,x^2$
$C = 6\,x \times (-10\,x) + 6\,x \times (-8) - 9 \times (-10\,x) - 9 \times (-8) + 6\,x^2$
$C = 6 \times x \times (-10) \times x + 6 \times x \times (-8) - 9 \times (-10) \times x + 72 + 6\,x^2$
$C = 6 \times (-10) \times x \times x + 6 \times (-8) \times x + 90\,x + 6\,x^2 + 72$
$C = -60\,x^2 - 48\,x + 6\,x^2 + 90\,x + 72$
$C = -60\,x^2 + 6\,x^2 - 48\,x + 90\,x + 72$

$C = (-60 + 6)\,x^2 + (-48 + 90)\,x + 72$

$\boxed{C = -54\,x^2 + 42\,x + 72}$

$D = 4\,x + 7 + (-10\,x + 10) \times (-9\,x - 7)$
$D = 4\,x + 7 - 10\,x \times (-9\,x) - 10\,x \times (-7) + 10 \times (-9\,x) + 10 \times (-7)$
$D = 4\,x + 7 - 10 \times x \times (-9) \times x - 10 \times x \times (-7) + 10 \times (-9) \times x - 70$
$D = 4\,x + 7 - 10 \times (-9) \times x \times x - 10 \times (-7) \times x - 90\,x - 70$
$D = 4\,x + 7 - (-90\,x^2) - (-70\,x) - 90\,x - 70$
$D = 90\,x^2 + 4\,x + 70\,x + 7 - 90\,x - 70$
$D = 90\,x^2 + 4\,x + 70\,x - 90\,x + 7 - 70$
$D = 90\,x^2 + (4 + 70 - 90)\,x - 63$

$\boxed{D = 90\,x^2 - 16\,x - 63}$

$E = 10 + (5\,x - 10) \times (7\,x - 6)$
$E = 10 + 5\,x \times 7\,x + 5\,x \times (-6) - 10 \times 7\,x - 10 \times (-6)$
$E = 10 + 5 \times x \times 7 \times x + 5 \times x \times (-6) - 10 \times 7 \times x + 60$
$E = 10 + 5 \times 7 \times x \times x + 5 \times (-6) \times x - 70\,x + 60$
$E = 10 + 35\,x^2 - 30\,x - 70\,x + 60$
$E = 35\,x^2 - 30\,x - 70\,x + 10 + 60$
$E = 35\,x^2 + (-30 - 70)\,x + 70$

$\boxed{E = 35\,x^2 - 100\,x + 70}$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

$A = 8\,x \times x$
$A = 8 \times x \times x$
$\boxed{A = 8\,x^2}$

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

$B = 8 \times x \times 7 \times x$
$B = 8 \times 7 \times x \times x$
$\boxed{B = 56\,x^2}$

$C = (-10\,x + 6) \times (3\,x - 4) - 2$
$C = -10\,x \times 3\,x - 10\,x \times (-4) + 6 \times 3\,x + 6 \times (-4) - 2$
$C = -10 \times x \times 3 \times x - 10 \times x \times (-4) + 6 \times 3 \times x - 24 - 2$
$C = -10 \times 3 \times x \times x - 10 \times (-4) \times x + 18\,x - 26$
$C = -30\,x^2 - (-40\,x) + 18\,x - 26$
$C = -30\,x^2 + 40\,x + 18\,x - 26$
$C = -30\,x^2 + (40 + 18)\,x - 26$

$\boxed{C = -30\,x^2 + 58\,x - 26}$

$D = -5\,x - 10 + (x - 10) \times (-10\,x + 7)$
$D = -5\,x - 10 + x \times (-10\,x) + x \times 7 - 10 \times (-10\,x) - 10 \times 7$
$D = -5\,x - 10 + x \times (-10) \times x + 7 \times x - 10 \times (-10) \times x - 70$
$D = -5\,x - 10 - 10 \times x \times x + 7\,x + 100\,x - 70$
$D = -5\,x - 10 - 10\,x^2 + (7 + 100)\,x - 70$
$D = -10\,x^2 - 5\,x - 10 + (7 + 100)\,x - 70$
$D = -10\,x^2 - 5\,x + (7 + 100)\,x - 10 - 70$
$D = -10\,x^2 + (-5 + 7 + 100)\,x - 80$

$\boxed{D = -10\,x^2 + 102\,x - 80}$

$E = (-6\,x + 3) \times (-10\,x - 6) + 6\,x^2$
$E = -6\,x \times (-10\,x) - 6\,x \times (-6) + 3 \times (-10\,x) + 3 \times (-6) + 6\,x^2$
$E = -6 \times x \times (-10) \times x - 6 \times x \times (-6) + 3 \times (-10) \times x - 18 + 6\,x^2$
$E = -6 \times (-10) \times x \times x - 6 \times (-6) \times x - 30\,x + 6\,x^2 - 18$
$E = 60\,x^2 - (-36\,x) + 6\,x^2 - 30\,x - 18$
$E = 60\,x^2 + 36\,x + 6\,x^2 - 30\,x - 18$
$E = 60\,x^2 + 6\,x^2 + 36\,x - 30\,x - 18$
$E = (60 + 6)\,x^2 + (36 - 30)\,x - 18$
$\boxed{E = 66\,x^2 + 6\,x - 18}$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

$A = 7\,x \times x$
$A = 7 \times x \times x$
$\boxed{A = 7\,x^2}$

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

$B = 7 \times x \times 8 \times x$
$B = 7 \times 8 \times x \times x$
$\boxed{B = 56\,x^2}$

$C = 5\,x - 1 + (-7\,x - 3) \times (-2\,x - 7)$
$C = 5\,x - 1 - 7\,x \times (-2\,x) - 7\,x \times (-7) - 3 \times (-2\,x) - 3 \times (-7)$
$C = 5\,x - 1 - 7 \times x \times (-2) \times x - 7 \times x \times (-7) - 3 \times (-2) \times x + 21$
$C = 5\,x - 1 - 7 \times (-2) \times x \times x - 7 \times (-7) \times x + 6\,x + 21$
$C = 5\,x - 1 - (-14\,x^2) - (-49\,x) + 6\,x + 21$
$C = 14\,x^2 + 5\,x + 49\,x - 1 + 6\,x + 21$
$C = 14\,x^2 + 5\,x + 49\,x + 6\,x - 1 + 21$
$C = 14\,x^2 + (5 + 49 + 6)\,x + 20$
$\boxed{C = 14\,x^2 + 60\,x + 20}$

$D = -6 + (-5\,x - 1) \times (-5\,x - 5)$
$D = -6 - 5\,x \times (-5\,x) - 5\,x \times (-5) - 1 \times (-5\,x) - 1 \times (-5)$
$D = -6 - 5 \times x \times (-5) \times x - 5 \times x \times (-5) - 1 \times (-5) \times x + 5$
$D = -6 - 5 \times (-5) \times x \times x - 5 \times (-5) \times x + 5\,x + 5$
$D = -6 - (-25\,x^2) - (-25\,x) + 5\,x + 5$
$D = 25\,x^2 + 25\,x - 6 + 5\,x + 5$
$D = 25\,x^2 + 25\,x + 5\,x - 6 + 5$
$D = 25\,x^2 + (25 + 5)\,x - 1$
$\boxed{D = 25\,x^2 + 30\,x - 1}$

$E = (-2\,x - 10) \times (10\,x - 4) - 5\,x^2$
$E = -2\,x \times 10\,x - 2\,x \times (-4) - 10 \times 10\,x - 10 \times (-4) - 5\,x^2$
$E = -2 \times x \times 10 \times x - 2 \times x \times (-4) - 10 \times 10 \times x + 40 - 5\,x^2$
$E = -2 \times 10 \times x \times x - 2 \times (-4) \times x - 100\,x - 5\,x^2 + 40$
$E = -20\,x^2 - (-8\,x) - 5\,x^2 - 100\,x + 40$
$E = -20\,x^2 + 8\,x - 5\,x^2 - 100\,x + 40$
$E = -20\,x^2 - 5\,x^2 + 8\,x - 100\,x + 40$
$E = (-20 - 5)\,x^2 + (8 - 100)\,x + 40$
$\boxed{E = -25\,x^2 - 92\,x + 40}$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

$A = 2\,x \times x$
$A = 2 \times x \times x$
$\boxed{A = 2\,x^2}$

$B = 8\,x \times 3\,x$

$B = 8 \times x \times 3 \times x$
$B = 8 \times 3 \times x \times x$
$\boxed{B = 24\,x^2}$

$C = -3\,x^2 + (-x + 10) \times (9\,x + 1)$
$C = -3\,x^2 - x \times 9\,x - x \times 1 + 10 \times 9\,x + 10 \times 1$
$C = -3\,x^2 - 1 \times x \times 9 \times x - 1 \times x \times 1 + 10 \times 9 \times x + 10$
$C = -3\,x^2 - 1 \times 9 \times x \times x - 1 \times x + 90\,x + 10$
$C = -3\,x^2 - 9\,x^2 - x + 90\,x + 10$
$C = -12\,x^2 - x + 90\,x + 10$
$C = -12\,x^2 + (-1 + 90)\,x + 10$
$\boxed{C = -12\,x^2 + 89\,x + 10}$

$D = (-2\,x - 10) \times (-2\,x - 5) + 3$
$D = -2\,x \times (-2\,x) - 2\,x \times (-5) - 10 \times (-2\,x) - 10 \times (-5) + 3$
$D = -2 \times x \times (-2) \times x - 2 \times x \times (-5) - 10 \times (-2) \times x + 50 + 3$
$D = -2 \times (-2) \times x \times x - 2 \times (-5) \times x + 20\,x + 53$
$D = 4\,x^2 - (-10\,x) + 20\,x + 53$
$D = 4\,x^2 + 10\,x + 20\,x + 53$
$D = 4\,x^2 + (10 + 20)\,x + 53$
$\boxed{D = 4\,x^2 + 30\,x + 53}$

$E = (x + 4) \times (10\,x + 1) + 9\,x - 3$
$E = x \times 10\,x + x \times 1 + 4 \times 10\,x + 4 \times 1 + 9\,x - 3$
$E = x \times 10 \times x + x + 4 \times 10 \times x + 4 + 9\,x - 3$
$E = 10 \times x \times x + x + 40\,x + 9\,x + 4 - 3$
$E = 10\,x^2 + (1 + 40 + 9)\,x + 1$
$\boxed{E = 10\,x^2 + 50\,x + 1}$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 3\,x \times 7\,x$
$B = 3 \times x \times 7 \times x$
$B = 3 \times 7 \times x \times x$
$\boxed{B = 21\,x^2}$

$C = (-3\,x + 2) \times (2\,x - 2) + 8$
$C = -3\,x \times 2\,x - 3\,x \times (-2) + 2 \times 2\,x + 2 \times (-2) + 8$
$C = -3 \times x \times 2 \times x - 3 \times x \times (-2) + 2 \times 2 \times x - 4 + 8$
$C = -3 \times 2 \times x \times x - 3 \times (-2) \times x + 4\,x + 4$
$C = -6\,x^2 - (-6\,x) + 4\,x + 4$
$C = -6\,x^2 + 6\,x + 4\,x + 4$
$C = -6\,x^2 + (6 + 4)\,x + 4$
$\boxed{C = -6\,x^2 + 10\,x + 4}$

$D = 7\,x + 2 + (7\,x + 9) \times (-4\,x - 2)$
$D = 7\,x + 2 + 7\,x \times (-4\,x) + 7\,x \times (-2) + 9 \times (-4\,x) + 9 \times (-2)$

$D = 7\,x + 2 + 7 \times x \times (-4) \times x + 7 \times x \times (-2) + 9 \times (-4) \times x - 18$
$D = 7\,x + 2 + 7 \times (-4) \times x \times x + 7 \times (-2) \times x - 36\,x - 18$
$D = 7\,x + 2 - 28\,x^2 - 14\,x - 36\,x - 18$
$D = -28\,x^2 + 7\,x - 14\,x - 36\,x + 2 - 18$
$D = -28\,x^2 + (7 - 14 - 36)\,x - 16$
$\boxed{D = -28\,x^2 - 43\,x - 16}$

$E = (-2\,x + 3) \times (4\,x - 4) - 10\,x^2$
$E = -2\,x \times 4\,x - 2\,x \times (-4) + 3 \times 4\,x + 3 \times (-4) - 10\,x^2$
$E = -2 \times x \times 4 \times x - 2 \times x \times (-4) + 3 \times 4 \times x - 12 - 10\,x^2$
$E = -2 \times 4 \times x \times x - 2 \times (-4) \times x + 12\,x - 10\,x^2 - 12$
$E = -8\,x^2 - (-8\,x) - 10\,x^2 + 12\,x - 12$
$E = -8\,x^2 + 8\,x - 10\,x^2 + 12\,x - 12$
$E = -8\,x^2 - 10\,x^2 + 8\,x + 12\,x - 12$
$E = (-8 - 10)\,x^2 + (8 + 12)\,x - 12$
$\boxed{E = -18\,x^2 + 20\,x - 12}$