Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$A = x \times 9\,x$
$A = x \times 9 \times x$
$A = 9 \times x \times x$
$\boxed{A = 9\,x^2}$

$B = 6\,x \times 4\,x$
$B = 6 \times x \times 4 \times x$
$B = 6 \times 4 \times x \times x$
$\boxed{B = 24\,x^2}$

$C = -7\,x + 1 + (5\,x - 7) \times (7\,x - 3)$
$C = -7\,x + 1 + 5\,x \times 7\,x + 5\,x \times (-3) - 7 \times 7\,x - 7 \times (-3)$
$C = -7\,x + 1 + 5 \times x \times 7 \times x + 5 \times x \times (-3) - 7 \times 7 \times x + 21$
$C = -7\,x + 1 + 5 \times 7 \times x \times x + 5 \times (-3) \times x - 49\,x + 21$
$C = -7\,x + 1 + 35\,x^2 - 15\,x - 49\,x + 21$
$C = 35\,x^2 - 7\,x - 15\,x - 49\,x + 1 + 21$
$C = 35\,x^2 + (-7 - 15 - 49)\,x + 22$
$\boxed{C = 35\,x^2 - 71\,x + 22}$

$D = (10\,x - 5) \times (-6\,x + 8) - 2\,x^2$
$D = 10\,x \times (-6\,x) + 10\,x \times 8 - 5 \times (-6\,x) - 5 \times 8 - 2\,x^2$
$D = 10 \times x \times (-6) \times x + 10 \times x \times 8 - 5 \times (-6) \times x - 40 - 2\,x^2$
$D = 10 \times (-6) \times x \times x + 10 \times 8 \times x + 30\,x - 2\,x^2 - 40$
$D = -60\,x^2 + 80\,x - 2\,x^2 + 30\,x - 40$
$D = -60\,x^2 - 2\,x^2 + 80\,x + 30\,x - 40$
$D = (-60 - 2)\,x^2 + (80 + 30)\,x - 40$
$\boxed{D = -62\,x^2 + 110\,x - 40}$

$E = (-3\,x - 7) \times (-8\,x + 9) - 9$
$E = -3\,x \times (-8\,x) - 3\,x \times 9 - 7 \times (-8\,x) - 7 \times 9 - 9$
$E = -3 \times x \times (-8) \times x - 3 \times x \times 9 - 7 \times (-8) \times x - 63 - 9$
$E = -3 \times (-8) \times x \times x - 3 \times 9 \times x + 56\,x - 72$
$E = 24\,x^2 - 27\,x + 56\,x - 72$
$E = 24\,x^2 + (-27 + 56)\,x - 72$
$\boxed{E = 24\,x^2 + 29\,x - 72}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$A = x \times 9\,x$
$A = x \times 9 \times x$
$A = 9 \times x \times x$
$\boxed{A = 9\,x^2}$

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

$C = (8\,x + 2) \times (5\,x + 9) - 5\,x - 6$
$C = 8\,x \times 5\,x + 8\,x \times 9 + 2 \times 5\,x + 2 \times 9 - 5\,x - 6$
$C = 8 \times x \times 5 \times x + 8 \times x \times 9 + 2 \times 5 \times x + 18 - 5\,x - 6$
$C = 8 \times 5 \times x \times x + 8 \times 9 \times x + 10\,x - 5\,x + 18 - 6$
$C = 40\,x^2 + 72\,x + (10 - 5)\,x + 12$
$C = 40\,x^2 + (72 + 10 - 5)\,x + 12$

$$\boxed{C = 40\,x^2 + 77\,x + 12}$$

$D = (-x - 4) \times (-9\,x - 5) + 9\,x^2$
$D = -x \times (-9\,x) - x \times (-5) - 4 \times (-9\,x) - 4 \times (-5) + 9\,x^2$
$D = -1 \times x \times (-9) \times x - 1 \times x \times (-5) - 4 \times (-9) \times x + 20 + 9\,x^2$
$D = -1 \times (-9) \times x \times x - 1 \times (-5) \times x + 36\,x + 9\,x^2 + 20$
$D = 9\,x^2 - (-5\,x) + 9\,x^2 + 36\,x + 20$
$D = 9\,x^2 + 5\,x + 9\,x^2 + 36\,x + 20$
$D = 9\,x^2 + 9\,x^2 + 5\,x + 36\,x + 20$
$D = (9 + 9)\,x^2 + (5 + 36)\,x + 20$
$$\boxed{D = 18\,x^2 + 41\,x + 20}$$

$E = 8 + (-10\,x - 10) \times (-6\,x - 2)$
$E = 8 - 10\,x \times (-6\,x) - 10\,x \times (-2) - 10 \times (-6\,x) - 10 \times (-2)$
$E = 8 - 10 \times x \times (-6) \times x - 10 \times x \times (-2) - 10 \times (-6) \times x + 20$
$E = 8 - 10 \times (-6) \times x \times x - 10 \times (-2) \times x + 60\,x + 20$
$E = 8 - (-60\,x^2) - (-20\,x) + 60\,x + 20$
$E = 60\,x^2 + 20\,x + 8 + 60\,x + 20$
$E = 60\,x^2 + 20\,x + 60\,x + 8 + 20$
$E = 60\,x^2 + (20 + 60)\,x + 28$
$$\boxed{E = 60\,x^2 + 80\,x + 28}$$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 5\,x \times 2\,x$
$B = 5 \times x \times 2 \times x$
$B = 5 \times 2 \times x \times x$
$$\boxed{B = 10\,x^2}$$

$C = (-3\,x + 3) \times (-7\,x - 7) + 9$
$C = -3\,x \times (-7\,x) - 3\,x \times (-7) + 3 \times (-7\,x) + 3 \times (-7) + 9$
$C = -3 \times x \times (-7) \times x - 3 \times x \times (-7) + 3 \times (-7) \times x - 21 + 9$
$C = -3 \times (-7) \times x \times x - 3 \times (-7) \times x - 21\,x - 12$
$C = 21\,x^2 - (-21\,x) - 21\,x - 12$
$C = 21\,x^2 + 21\,x - 21\,x - 12$
$C = 21\,x^2 + (21 - 21)\,x - 12$
$$\boxed{C = 21\,x^2 - 12}$$

$D = 5\,x + 1 + (9\,x - 2) \times (-7\,x - 4)$
$D = 5\,x + 1 + 9\,x \times (-7\,x) + 9\,x \times (-4) - 2 \times (-7\,x) - 2 \times (-4)$
$D = 5\,x + 1 + 9 \times x \times (-7) \times x + 9 \times x \times (-4) - 2 \times (-7) \times x + 8$
$D = 5\,x + 1 + 9 \times (-7) \times x \times x + 9 \times (-4) \times x + 14\,x + 8$
$D = 5\,x + 1 - 63\,x^2 - 36\,x + 14\,x + 8$
$D = -63\,x^2 + 5\,x - 36\,x + 14\,x + 1 + 8$
$D = -63\,x^2 + (5 - 36 + 14)\,x + 9$
$$\boxed{D = -63\,x^2 - 17\,x + 9}$$

$E = 10\,x^2 + (9\,x - 4) \times (5\,x - 1)$
$E = 10\,x^2 + 9\,x \times 5\,x + 9\,x \times (-1) - 4 \times 5\,x - 4 \times (-1)$

$E = 10\,x^2 + 9 \times x \times 5 \times x + 9 \times x \times (-1) - 4 \times 5 \times x + 4$
$E = 10\,x^2 + 9 \times 5 \times x \times x + 9 \times (-1) \times x - 20\,x + 4$
$E = 10\,x^2 + 45\,x^2 - 9\,x - 20\,x + 4$
$E = (10 + 45)\,x^2 + (-9 - 20)\,x + 4$
$\boxed{E = 55\,x^2 - 29\,x + 4}$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 6\,x \times 2\,x$

$B = 6 \times x \times 2 \times x$
$B = 6 \times 2 \times x \times x$
$\boxed{B = 12\,x^2}$

$C = 3\,x^2 + (5\,x - 1) \times (-8\,x + 1)$
$C = 3\,x^2 + 5\,x \times (-8\,x) + 5\,x \times 1 - 1 \times (-8\,x) - 1 \times 1$
$C = 3\,x^2 + 5 \times x \times (-8) \times x + 5 \times x \times 1 - 1 \times (-8) \times x - 1$
$C = 3\,x^2 + 5 \times (-8) \times x \times x + 5 \times x + 8\,x - 1$
$C = 3\,x^2 - 40\,x^2 + 5\,x + 8\,x - 1$
$C = (3 - 40)\,x^2 + (5 + 8)\,x - 1$
$\boxed{C = -37\,x^2 + 13\,x - 1}$

$D = -5\,x + 1 + (-x - 1) \times (x + 6)$
$D = -5\,x + 1 - x \times x - x \times 6 - 1 \times x - 1 \times 6$
$D = -5\,x + 1 - 1 \times x \times x - 1 \times x \times 6 - x - 6$
$D = -5\,x + 1 - x^2 - 1 \times 6 \times x - x - 6$
$D = -x^2 - 5\,x + 1 - 6\,x - x - 6$
$D = -x^2 - 5\,x - 6\,x + 1 - x - 6$
$D = -x^2 - 5\,x - 6\,x - x + 1 - 6$
$D = -x^2 + (-5 - 6 - 1)\,x - 5$
$\boxed{D = -x^2 - 12\,x - 5}$

$E = (7\,x - 2) \times (-2\,x + 9) - 5$
$E = 7\,x \times (-2\,x) + 7\,x \times 9 - 2 \times (-2\,x) - 2 \times 9 - 5$
$E = 7 \times x \times (-2) \times x + 7 \times x \times 9 - 2 \times (-2) \times x - 18 - 5$
$E = 7 \times (-2) \times x \times x + 7 \times 9 \times x + 4\,x - 23$
$E = -14\,x^2 + 63\,x + 4\,x - 23$
$E = -14\,x^2 + (63 + 4)\,x - 23$
$\boxed{E = -14\,x^2 + 67\,x - 23}$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 4\,x \times 9\,x$

$B = 4 \times x \times 9 \times x$
$B = 4 \times 9 \times x \times x$
$\boxed{B = 36\,x^2}$

$C = 3\,x^2 + (4\,x + 9) \times (x - 8)$
$C = 3\,x^2 + 4\,x \times x + 4\,x \times (-8) + 9 \times x + 9 \times (-8)$
$C = 3\,x^2 + 4 \times x \times x + 4 \times x \times (-8) + 9\,x - 72$
$C = 3\,x^2 + 4\,x^2 + 4 \times (-8) \times x + 9\,x - 72$
$C = (3 + 4)\,x^2 - 32\,x + 9\,x - 72$
$C = (3 + 4)\,x^2 + (-32 + 9)\,x - 72$
$\boxed{C = 7\,x^2 - 23\,x - 72}$

$D = -6\,x - 8 + (7\,x + 6) \times (6\,x + 8)$
$D = -6\,x - 8 + 7\,x \times 6\,x + 7\,x \times 8 + 6 \times 6\,x + 6 \times 8$
$D = -6\,x - 8 + 7 \times x \times 6 \times x + 7 \times x \times 8 + 6 \times 6 \times x + 48$
$D = -6\,x - 8 + 7 \times 6 \times x \times x + 7 \times 8 \times x + 36\,x + 48$
$D = -6\,x - 8 + 42\,x^2 + 56\,x + 36\,x + 48$
$D = 42\,x^2 - 6\,x + 56\,x + 36\,x - 8 + 48$
$D = 42\,x^2 + (-6 + 56 + 36)\,x + 40$
$\boxed{D = 42\,x^2 + 86\,x + 40}$

$E = -3 + (-8\,x + 6) \times (-9\,x + 9)$
$E = -3 - 8\,x \times (-9\,x) - 8\,x \times 9 + 6 \times (-9\,x) + 6 \times 9$
$E = -3 - 8 \times x \times (-9) \times x - 8 \times x \times 9 + 6 \times (-9) \times x + 54$
$E = -3 - 8 \times (-9) \times x \times x - 8 \times 9 \times x - 54\,x + 54$
$E = -3 - (-72\,x^2) - 72\,x - 54\,x + 54$
$E = 72\,x^2 - 72\,x - 3 - 54\,x + 54$
$E = 72\,x^2 - 72\,x - 54\,x - 3 + 54$
$E = 72\,x^2 + (-72 - 54)\,x + 51$
$\boxed{E = 72\,x^2 - 126\,x + 51}$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 8\,x \times 5\,x$

$B = 8 \times x \times 5 \times x$
$B = 8 \times 5 \times x \times x$
$\boxed{B = 40\,x^2}$

$C = (4\,x - 4) \times (6\,x + 2) + x^2$
$C = 4\,x \times 6\,x + 4\,x \times 2 - 4 \times 6\,x - 4 \times 2 + x^2$
$C = 4 \times x \times 6 \times x + 4 \times x \times 2 - 4 \times 6 \times x - 8 + x^2$
$C = 4 \times 6 \times x \times x + 4 \times 2 \times x - 24\,x + x^2 - 8$
$C = 24\,x^2 + 8\,x + x^2 - 24\,x - 8$
$C = 24\,x^2 + x^2 + 8\,x - 24\,x - 8$
$C = (24 + 1)\,x^2 + (8 - 24)\,x - 8$
$\boxed{C = 25\,x^2 - 16\,x - 8}$

$D = (-7\,x + 3) \times (-8\,x + 1) + 2\,x - 10$
$D = -7\,x \times (-8\,x) - 7\,x \times 1 + 3 \times (-8\,x) + 3 \times 1 + 2\,x - 10$
$D = -7 \times x \times (-8) \times x - 7 \times x \times 1 + 3 \times (-8) \times x + 3 + 2\,x - 10$
$D = -7 \times (-8) \times x \times x - 7 \times x - 24\,x + 2\,x + 3 - 10$
$D = 56\,x^2 - 7\,x\,(-24 + 2)\,x - 7$
$D = 56\,x^2 + (-7 + (-24) + 2)\,x - 7$

$$\boxed{D = 56\,x^2 - 29\,x - 7}$$

$E = 8 + (6\,x - 2) \times (3\,x + 10)$
$E = 8 + 6\,x \times 3\,x + 6\,x \times 10 - 2 \times 3\,x - 2 \times 10$
$E = 8 + 6 \times x \times 3 \times x + 6 \times x \times 10 - 2 \times 3 \times x - 20$
$E = 8 + 6 \times 3 \times x \times x + 6 \times 10 \times x - 6\,x - 20$
$E = 8 + 18\,x^2 + 60\,x - 6\,x - 20$
$E = 18\,x^2 + 60\,x - 6\,x + 8 - 20$
$E = 18\,x^2 + (60 - 6)\,x - 12$
$$\boxed{E = 18\,x^2 + 54\,x - 12}$$