Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 9\,x \times 8\,x$
$B = 9 \times x \times 8 \times x$
$B = 9 \times 8 \times x \times x$
$\boxed{B = 72\,x^2}$

$C = (-6\,x - 1) \times (-2\,x + 7) + 10\,x - 6$
$C = -6\,x \times (-2\,x) - 6\,x \times 7 - 1 \times (-2\,x) - 1 \times 7 + 10\,x - 6$
$C = -6 \times x \times (-2) \times x - 6 \times x \times 7 - 1 \times (-2) \times x - 7 + 10\,x - 6$
$C = -6 \times (-2) \times x \times x - 6 \times 7 \times x + 2\,x + 10\,x - 7 - 6$
$C = 12\,x^2 - 42\,x + (2 + 10)\,x - 13$
$C = 12\,x^2 + (-42 + 2 + 10)\,x - 13$
$\boxed{C = 12\,x^2 - 30\,x - 13}$

$D = 7 + (4\,x - 9) \times (4\,x - 3)$
$D = 7 + 4\,x \times 4\,x + 4\,x \times (-3) - 9 \times 4\,x - 9 \times (-3)$
$D = 7 + 4 \times x \times 4 \times x + 4 \times x \times (-3) - 9 \times 4 \times x + 27$
$D = 7 + 4 \times 4 \times x \times x + 4 \times (-3) \times x - 36\,x + 27$
$D = 7 + 16\,x^2 - 12\,x - 36\,x + 27$
$D = 16\,x^2 - 12\,x - 36\,x + 7 + 27$
$D = 16\,x^2 + (-12 - 36)\,x + 34$
$\boxed{D = 16\,x^2 - 48\,x + 34}$

$E = (-7\,x - 2) \times (-5\,x + 8) - 6\,x^2$
$E = -7\,x \times (-5\,x) - 7\,x \times 8 - 2 \times (-5\,x) - 2 \times 8 - 6\,x^2$
$E = -7 \times x \times (-5) \times x - 7 \times x \times 8 - 2 \times (-5) \times x - 16 - 6\,x^2$
$E = -7 \times (-5) \times x \times x - 7 \times 8 \times x + 10\,x - 6\,x^2 - 16$
$E = 35\,x^2 - 56\,x - 6\,x^2 + 10\,x - 16$
$E = 35\,x^2 - 6\,x^2 - 56\,x + 10\,x - 16$
$E = (35 - 6)\,x^2 + (-56 + 10)\,x - 16$
$\boxed{E = 29\,x^2 - 46\,x - 16}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 3\,x \times 9\,x$
$B = 3 \times x \times 9 \times x$
$B = 3 \times 9 \times x \times x$
$\boxed{B = 27\,x^2}$

$C = -4 + (9\,x + 3) \times (3\,x + 9)$
$C = -4 + 9\,x \times 3\,x + 9\,x \times 9 + 3 \times 3\,x + 3 \times 9$
$C = -4 + 9 \times x \times 3 \times x + 9 \times x \times 9 + 3 \times 3 \times x + 27$
$C = -4 + 9 \times 3 \times x \times x + 9 \times 9 \times x + 9\,x + 27$
$C = -4 + 27\,x^2 + 81\,x + 9\,x + 27$
$C = 27\,x^2 + 81\,x + 9\,x - 4 + 27$
$C = 27\,x^2 + (81 + 9)\,x + 23$

$\boxed{C = 27\,x^2 + 90\,x + 23}$

$D = (-2\,x - 1) \times (-x - 2) + 2\,x^2$
$D = -2\,x \times (-x) - 2\,x \times (-2) - 1 \times (-x) - 1 \times (-2) + 2\,x^2$
$D = -2 \times x \times (-1) \times x - 2 \times x \times (-2) - 1 \times (-1) \times x + 2 + 2\,x^2$
$D = -2 \times (-1) \times x \times x - 2 \times (-2) \times x + x + 2\,x^2 + 2$
$D = 2\,x^2 - (-4\,x) + 2\,x^2 + x + 2$
$D = 2\,x^2 + 4\,x + 2\,x^2 + x + 2$
$D = 2\,x^2 + 2\,x^2 + 4\,x + x + 2$
$D = (2 + 2)\ x^2 + (4 + 1)\ x + 2$
$\boxed{D = 4\,x^2 + 5\,x + 2}$

$E = 2\,x - 2 + (5\,x - 8) \times (-4\,x + 10)$
$E = 2\,x - 2 + 5\,x \times (-4\,x) + 5\,x \times 10 - 8 \times (-4\,x) - 8 \times 10$
$E = 2\,x - 2 + 5 \times x \times (-4) \times x + 5 \times x \times 10 - 8 \times (-4) \times x - 80$
$E = 2\,x - 2 + 5 \times (-4) \times x \times x + 5 \times 10 \times x + 32\,x - 80$
$E = 2\,x - 2 - 20\,x^2 + 50\,x + 32\,x - 80$
$E = -20\,x^2 + 2\,x + 50\,x + 32\,x - 2 - 80$
$E = -20\,x^2 + (2 + 50 + 32)\ x - 82$
$\boxed{E = -20\,x^2 + 84\,x - 82}$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = (2\,x + 4) \times (5\,x - 10) + 1$
$C = 2\,x \times 5\,x + 2\,x \times (-10) + 4 \times 5\,x + 4 \times (-10) + 1$
$C = 2 \times x \times 5 \times x + 2 \times x \times (-10) + 4 \times 5 \times x - 40 + 1$
$C = 2 \times 5 \times x \times x + 2 \times (-10) \times x + 20\,x - 39$
$C = 10\,x^2 - 20\,x + 20\,x - 39$
$C = 10\,x^2 + (-20 + 20)\ x - 39$
$\boxed{C = 10\,x^2 - 39}$

$D = 7\,x + 6 + (10\,x - 6) \times (7\,x + 8)$
$D = 7\,x + 6 + 10\,x \times 7\,x + 10\,x \times 8 - 6 \times 7\,x - 6 \times 8$
$D = 7\,x + 6 + 10 \times x \times 7 \times x + 10 \times x \times 8 - 6 \times 7 \times x - 48$
$D = 7\,x + 6 + 10 \times 7 \times x \times x + 10 \times 8 \times x - 42\,x - 48$
$D = 7\,x + 6 + 70\,x^2 + 80\,x - 42\,x - 48$
$D = 70\,x^2 + 7\,x + 80\,x - 42\,x + 6 - 48$
$D = 70\,x^2 + (7 + 80 - 42)\ x - 42$
$\boxed{D = 70\,x^2 + 45\,x - 42}$

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

$E = -x^2 + 8 \times (-1) \times x \times x + 8 \times x + x - 1$
$E = -x^2 - 8\,x^2 + 8\,x + x - 1$
$E = (-1 - 8)\ x^2 + (8 + 1)\ x - 1$
$\boxed{E = -9\,x^2 + 9\,x - 1}$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 8\,x \times 2\,x$
$B = 8 \times x \times 2 \times x$
$B = 8 \times 2 \times x \times x$
$\boxed{B = 16\,x^2}$

$C = -7\,x - 2 + (-3\,x + 6) \times (10\,x + 3)$
$C = -7\,x - 2 - 3\,x \times 10\,x - 3\,x \times 3 + 6 \times 10\,x + 6 \times 3$
$C = -7\,x - 2 - 3 \times x \times 10 \times x - 3 \times x \times 3 + 6 \times 10 \times x + 18$
$C = -7\,x - 2 - 3 \times 10 \times x \times x - 3 \times 3 \times x + 60\,x + 18$
$C = -7\,x - 2 - 30\,x^2 - 9\,x + 60\,x + 18$
$C = -30\,x^2 - 7\,x - 9\,x - 2 + 60\,x + 18$
$C = -30\,x^2 - 7\,x - 9\,x + 60\,x - 2 + 18$
$C = -30\,x^2 + (-7 - 9 + 60)\ x + 16$
$\boxed{C = -30\,x^2 + 44\,x + 16}$

$D = (6\,x - 4) \times (2\,x - 7) - 7\,x^2$
$D = 6\,x \times 2\,x + 6\,x \times (-7) - 4 \times 2\,x - 4 \times (-7) - 7\,x^2$
$D = 6 \times x \times 2 \times x + 6 \times x \times (-7) - 4 \times 2 \times x + 28 - 7\,x^2$
$D = 6 \times 2 \times x \times x + 6 \times (-7) \times x - 8\,x - 7\,x^2 + 28$
$D = 12\,x^2 - 42\,x - 7\,x^2 - 8\,x + 28$
$D = 12\,x^2 - 7\,x^2 - 42\,x - 8\,x + 28$
$D = (12 - 7)\ x^2 + (-42 - 8)\ x + 28$
$\boxed{D = 5\,x^2 - 50\,x + 28}$

$E = 6 + (-6\,x - 10) \times (6\,x - 6)$
$E = 6 - 6\,x \times 6\,x - 6\,x \times (-6) - 10 \times 6\,x - 10 \times (-6)$
$E = 6 - 6 \times x \times 6 \times x - 6 \times x \times (-6) - 10 \times 6 \times x + 60$
$E = 6 - 6 \times 6 \times x \times x - 6 \times (-6) \times x - 60\,x + 60$
$E = 6 - 36\,x^2 - (-36\,x) - 60\,x + 60$
$E = -36\,x^2 + 36\,x + 6 - 60\,x + 60$
$E = -36\,x^2 + 36\,x - 60\,x + 6 + 60$
$E = -36\,x^2 + (36 - 60)\ x + 66$
$\boxed{E = -36\,x^2 - 24\,x + 66}$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = (9\,x + 4) \times (5\,x - 5) + 6\,x^2$
$C = 9\,x \times 5\,x + 9\,x \times (-5) + 4 \times 5\,x + 4 \times (-5) + 6\,x^2$
$C = 9 \times x \times 5 \times x + 9 \times x \times (-5) + 4 \times 5 \times x - 20 + 6\,x^2$
$C = 9 \times 5 \times x \times x + 9 \times (-5) \times x + 20\,x + 6\,x^2 - 20$
$C = 45\,x^2 - 45\,x + 6\,x^2 + 20\,x - 20$
$C = 45\,x^2 + 6\,x^2 - 45\,x + 20\,x - 20$
$C = (45 + 6)\ x^2 + (-45 + 20)\ x - 20$
$\boxed{C = 51\,x^2 - 25\,x - 20}$

$D = -2\,x + 5 + (-3\,x + 10) \times (8\,x + 10)$
$D = -2\,x + 5 - 3\,x \times 8\,x - 3\,x \times 10 + 10 \times 8\,x + 10 \times 10$
$D = -2\,x + 5 - 3 \times x \times 8 \times x - 3 \times x \times 10 + 10 \times 8 \times x + 100$
$D = -2\,x + 5 - 3 \times 8 \times x \times x - 3 \times 10 \times x + 80\,x + 100$
$D = -2\,x + 5 - 24\,x^2 - 30\,x + 80\,x + 100$
$D = -24\,x^2 - 2\,x - 30\,x + 5 + 80\,x + 100$
$D = -24\,x^2 - 2\,x - 30\,x + 80\,x + 5 + 100$
$D = -24\,x^2 + (-2 - 30 + 80)\ x + 105$
$\boxed{D = -24\,x^2 + 48\,x + 105}$

$E = (-5\,x - 3) \times (-10\,x - 4) - 7$
$E = -5\,x \times (-10\,x) - 5\,x \times (-4) - 3 \times (-10\,x) - 3 \times (-4) - 7$
$E = -5 \times x \times (-10) \times x - 5 \times x \times (-4) - 3 \times (-10) \times x + 12 - 7$
$E = -5 \times (-10) \times x \times x - 5 \times (-4) \times x + 30\,x + 5$
$E = 50\,x^2 - (-20\,x) + 30\,x + 5$
$E = 50\,x^2 + 20\,x + 30\,x + 5$
$E = 50\,x^2 + (20 + 30)\ x + 5$
$\boxed{E = 50\,x^2 + 50\,x + 5}$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 4\,x \times 8\,x$
$B = 4 \times x \times 8 \times x$
$B = 4 \times 8 \times x \times x$
$\boxed{B = 32\,x^2}$

$C = (5\,x - 8) \times (-7\,x + 7) + 2\,x^2$
$C = 5\,x \times (-7\,x) + 5\,x \times 7 - 8 \times (-7\,x) - 8 \times 7 + 2\,x^2$
$C = 5 \times x \times (-7) \times x + 5 \times x \times 7 - 8 \times (-7) \times x - 56 + 2\,x^2$
$C = 5 \times (-7) \times x \times x + 5 \times 7 \times x + 56\,x + 2\,x^2 - 56$
$C = -35\,x^2 + 35\,x + 2\,x^2 + 56\,x - 56$
$C = -35\,x^2 + 2\,x^2 + 35\,x + 56\,x - 56$
$C = (-35 + 2)\ x^2 + (35 + 56)\ x - 56$

$\boxed{C = -33\,x^2 + 91\,x - 56}$

$D = (5\,x + 10) \times (2\,x - 6) + 1$
$D = 5\,x \times 2\,x + 5\,x \times (-6) + 10 \times 2\,x + 10 \times (-6) + 1$
$D = 5 \times x \times 2 \times x + 5 \times x \times (-6) + 10 \times 2 \times x - 60 + 1$
$D = 5 \times 2 \times x \times x + 5 \times (-6) \times x + 20\,x - 59$
$D = 10\,x^2 - 30\,x + 20\,x - 59$
$D = 10\,x^2 + (-30 + 20)\ x - 59$
$\boxed{D = 10\,x^2 - 10\,x - 59}$

$E = -6\,x + 3 + (x + 10) \times (-7\,x + 6)$
$E = -6\,x + 3 + x \times (-7\,x) + x \times 6 + 10 \times (-7\,x) + 10 \times 6$
$E = -6\,x + 3 + x \times (-7) \times x + 6 \times x + 10 \times (-7) \times x + 60$
$E = -6\,x + 3 - 7 \times x \times x + 6\,x - 70\,x + 60$
$E = -6\,x + 3 - 7\,x^2\,(6 - 70)\ x + 60$
$E = -7\,x^2 - 6\,x + 3\,(6 - 70)\ x + 60$
$E = -7\,x^2 - 6\,x + (6 - 70)\ x + 3 + 60$
$E = -7\,x^2 + (-6 + 6 - 70)\ x + 63$
$\boxed{E = -7\,x^2 - 70\,x + 63}$