Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 3\,x \times 6\,x$
$B = 3 \times x \times 6 \times x$
$B = 3 \times 6 \times x \times x$
$\boxed{B = 18\,x^2}$

$C = 2\,x + 7 + (9\,x - 9) \times (6\,x - 1)$
$C = 2\,x + 7 + 9\,x \times 6\,x + 9\,x \times (-1) - 9 \times 6\,x - 9 \times (-1)$
$C = 2\,x + 7 + 9 \times x \times 6 \times x + 9 \times x \times (-1) - 9 \times 6 \times x + 9$
$C = 2\,x + 7 + 9 \times 6 \times x \times x + 9 \times (-1) \times x - 54\,x + 9$
$C = 2\,x + 7 + 54\,x^2 - 9\,x - 54\,x + 9$
$C = 54\,x^2 + 2\,x - 9\,x - 54\,x + 7 + 9$
$C = 54\,x^2 + (2 - 9 - 54)\ x + 16$
$\boxed{C = 54\,x^2 - 61\,x + 16}$

$D = -10\,x^2 + (-6\,x - 5) \times (-4\,x + 2)$
$D = -10\,x^2 - 6\,x \times (-4\,x) - 6\,x \times 2 - 5 \times (-4\,x) - 5 \times 2$
$D = -10\,x^2 - 6 \times x \times (-4) \times x - 6 \times x \times 2 - 5 \times (-4) \times x - 10$
$D = -10\,x^2 - 6 \times (-4) \times x \times x - 6 \times 2 \times x + 20\,x - 10$
$D = -10\,x^2 - (-24\,x^2) - 12\,x + 20\,x - 10$
$D = 14\,x^2 - 12\,x + 20\,x - 10$
$D = 14\,x^2 + (-12 + 20)\ x - 10$
$\boxed{D = 14\,x^2 + 8\,x - 10}$

$E = 5 + (8\,x + 1) \times (9\,x - 4)$
$E = 5 + 8\,x \times 9\,x + 8\,x \times (-4) + 1 \times 9\,x + 1 \times (-4)$
$E = 5 + 8 \times x \times 9 \times x + 8 \times x \times (-4) + 1 \times 9 \times x - 4$
$E = 5 + 8 \times 9 \times x \times x + 8 \times (-4) \times x + 9\,x - 4$
$E = 5 + 72\,x^2 - 32\,x + 9\,x - 4$
$E = 72\,x^2 - 32\,x + 9\,x + 5 - 4$
$E = 72\,x^2 + (-32 + 9)\ x + 1$
$\boxed{E = 72\,x^2 - 23\,x + 1}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 9\,x \times 6\,x$
$B = 9 \times x \times 6 \times x$
$B = 9 \times 6 \times x \times x$
$\boxed{B = 54\,x^2}$

$C = (x + 10) \times (2\,x - 7) + 7$
$C = x \times 2\,x + x \times (-7) + 10 \times 2\,x + 10 \times (-7) + 7$
$C = x \times 2 \times x - 7 \times x + 10 \times 2 \times x - 70 + 7$
$C = 2 \times x \times x - 7\,x + 20\,x - 63$
$C = 2\,x^2 - 7\,x + 20\,x - 63$
$C = 2\,x^2 + (-7 + 20)\ x - 63$

$\boxed{C = 2\,x^2 + 13\,x - 63}$

$D = -6\,x - 8 + (5\,x + 8) \times (7\,x - 7)$
$D = -6\,x - 8 + 5\,x \times 7\,x + 5\,x \times (-7) + 8 \times 7\,x + 8 \times (-7)$
$D = -6\,x - 8 + 5 \times x \times 7 \times x + 5 \times x \times (-7) + 8 \times 7 \times x - 56$
$D = -6\,x - 8 + 5 \times 7 \times x \times x + 5 \times (-7) \times x + 56\,x - 56$
$D = -6\,x - 8 + 35\,x^2 - 35\,x + 56\,x - 56$
$D = 35\,x^2 - 6\,x - 35\,x + 56\,x - 8 - 56$
$D = 35\,x^2 + (-6 - 35 + 56)\ x - 64$
$\boxed{D = 35\,x^2 + 15\,x - 64}$

$E = -5\,x^2 + (-8\,x + 10) \times (5\,x - 3)$
$E = -5\,x^2 - 8\,x \times 5\,x - 8\,x \times (-3) + 10 \times 5\,x + 10 \times (-3)$
$E = -5\,x^2 - 8 \times x \times 5 \times x - 8 \times x \times (-3) + 10 \times 5 \times x - 30$
$E = -5\,x^2 - 8 \times 5 \times x \times x - 8 \times (-3) \times x + 50\,x - 30$
$E = -5\,x^2 - 40\,x^2 - (-24\,x) + 50\,x - 30$
$E = -45\,x^2 + 24\,x + 50\,x - 30$
$E = -45\,x^2 + (24 + 50)\ x - 30$
$\boxed{E = -45\,x^2 + 74\,x - 30}$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 3\,x \times 4\,x$
$B = 3 \times x \times 4 \times x$
$B = 3 \times 4 \times x \times x$
$\boxed{B = 12\,x^2}$

$C = (4\,x + 9) \times (2\,x - 9) + 3$
$C = 4\,x \times 2\,x + 4\,x \times (-9) + 9 \times 2\,x + 9 \times (-9) + 3$
$C = 4 \times x \times 2 \times x + 4 \times x \times (-9) + 9 \times 2 \times x - 81 + 3$
$C = 4 \times 2 \times x \times x + 4 \times (-9) \times x + 18\,x - 78$
$C = 8\,x^2 - 36\,x + 18\,x - 78$
$C = 8\,x^2 + (-36 + 18)\ x - 78$
$\boxed{C = 8\,x^2 - 18\,x - 78}$

$D = (10\,x - 9) \times (-4\,x + 1) - 6\,x^2$
$D = 10\,x \times (-4\,x) + 10\,x \times 1 - 9 \times (-4\,x) - 9 \times 1 - 6\,x^2$
$D = 10 \times x \times (-4) \times x + 10 \times x \times 1 - 9 \times (-4) \times x - 9 - 6\,x^2$
$D = 10 \times (-4) \times x \times x + 10 \times x + 36\,x - 6\,x^2 - 9$
$D = -40\,x^2 + 10\,x - 6\,x^2 + 36\,x - 9$
$D = -40\,x^2 - 6\,x^2 + 10\,x + 36\,x - 9$
$D = (-40 - 6)\ x^2 + (10 + 36)\ x - 9$
$\boxed{D = -46\,x^2 + 46\,x - 9}$

$E = (-8\,x - 8) \times (-7\,x + 7) + 6\,x - 1$
$E = -8\,x \times (-7\,x) - 8\,x \times 7 - 8 \times (-7\,x) - 8 \times 7 + 6\,x - 1$
$E = -8 \times x \times (-7) \times x - 8 \times x \times 7 - 8 \times (-7) \times x - 56 + 6\,x - 1$
$E = -8 \times (-7) \times x \times x - 8 \times 7 \times x + 56\,x + 6\,x - 56 - 1$

$E = 56\,x^2 - 56\,x + (56 + 6)\,x - 57$
$E = 56\,x^2 + (-56 + 56 + 6)\,x - 57$
$\boxed{E = 56\,x^2 + 6\,x - 57}$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 9\,x \times 9\,x$
$B = 9 \times x \times 9 \times x$
$B = 9 \times 9 \times x \times x$
$\boxed{B = 81\,x^2}$

$C = (-8\,x + 6) \times (7\,x + 4) + x^2$
$C = -8\,x \times 7\,x - 8\,x \times 4 + 6 \times 7\,x + 6 \times 4 + x^2$
$C = -8 \times x \times 7 \times x - 8 \times x \times 4 + 6 \times 7 \times x + 24 + x^2$
$C = -8 \times 7 \times x \times x - 8 \times 4 \times x + 42\,x + x^2 + 24$
$C = -56\,x^2 - 32\,x + x^2 + 42\,x + 24$
$C = -56\,x^2 + x^2 - 32\,x + 42\,x + 24$
$C = (-56 + 1)\,x^2 + (-32 + 42)\,x + 24$
$\boxed{C = -55\,x^2 + 10\,x + 24}$

$D = -8 + (-8\,x + 1) \times (-9\,x + 4)$
$D = -8 - 8\,x \times (-9\,x) - 8\,x \times 4 + 1 \times (-9\,x) + 1 \times 4$
$D = -8 - 8 \times x \times (-9) \times x - 8 \times x \times 4 + 1 \times (-9) \times x + 4$
$D = -8 - 8 \times (-9) \times x \times x - 8 \times 4 \times x - 9\,x + 4$
$D = -8 - (-72\,x^2) - 32\,x - 9\,x + 4$
$D = 72\,x^2 - 32\,x - 8 - 9\,x + 4$
$D = 72\,x^2 - 32\,x - 9\,x - 8 + 4$
$D = 72\,x^2 + (-32 - 9)\,x - 4$
$\boxed{D = 72\,x^2 - 41\,x - 4}$

$E = 5\,x - 7 + (-9\,x + 6) \times (10\,x + 1)$
$E = 5\,x - 7 - 9\,x \times 10\,x - 9\,x \times 1 + 6 \times 10\,x + 6 \times 1$
$E = 5\,x - 7 - 9 \times x \times 10 \times x - 9 \times x \times 1 + 6 \times 10 \times x + 6$
$E = 5\,x - 7 - 9 \times 10 \times x \times x - 9 \times x + 60\,x + 6$
$E = 5\,x - 7 - 90\,x^2 - 9\,x + 60\,x + 6$
$E = -90\,x^2 + 5\,x - 9\,x - 7 + 60\,x + 6$
$E = -90\,x^2 + 5\,x - 9\,x + 60\,x - 7 + 6$
$E = -90\,x^2 + (5 - 9 + 60)\,x - 1$
$\boxed{E = -90\,x^2 + 56\,x - 1}$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

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

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

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

$C = (10\,x - 6) \times (6\,x + 3) - 7\,x - 8$
$C = 10\,x \times 6\,x + 10\,x \times 3 - 6 \times 6\,x - 6 \times 3 - 7\,x - 8$
$C = 10 \times x \times 6 \times x + 10 \times x \times 3 - 6 \times 6 \times x - 18 - 7\,x - 8$
$C = 10 \times 6 \times x \times x + 10 \times 3 \times x - 36\,x - 7\,x - 18 - 8$
$C = 60\,x^2 + 30\,x\,(-36 - 7)\ x - 26$
$C = 60\,x^2 + (30 + (-36) - 7)\ x - 26$
$\boxed{C = 60\,x^2 - 13\,x - 26}$

$D = 10\,x^2 + (10\,x - 7) \times (6\,x + 6)$
$D = 10\,x^2 + 10\,x \times 6\,x + 10\,x \times 6 - 7 \times 6\,x - 7 \times 6$
$D = 10\,x^2 + 10 \times x \times 6 \times x + 10 \times x \times 6 - 7 \times 6 \times x - 42$
$D = 10\,x^2 + 10 \times 6 \times x \times x + 10 \times 6 \times x - 42\,x - 42$
$D = 10\,x^2 + 60\,x^2 + 60\,x - 42\,x - 42$
$D = (10 + 60)\ x^2 + (60 - 42)\ x - 42$
$\boxed{D = 70\,x^2 + 18\,x - 42}$

$E = -5 + (-6\,x + 3) \times (-5\,x + 4)$
$E = -5 - 6\,x \times (-5\,x) - 6\,x \times 4 + 3 \times (-5\,x) + 3 \times 4$
$E = -5 - 6 \times x \times (-5) \times x - 6 \times x \times 4 + 3 \times (-5) \times x + 12$
$E = -5 - 6 \times (-5) \times x \times x - 6 \times 4 \times x - 15\,x + 12$
$E = -5 - (-30\,x^2) - 24\,x - 15\,x + 12$
$E = 30\,x^2 - 24\,x - 5 - 15\,x + 12$
$E = 30\,x^2 - 24\,x - 15\,x - 5 + 12$
$E = 30\,x^2 + (-24 - 15)\ x + 7$
$\boxed{E = 30\,x^2 - 39\,x + 7}$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 9\,x \times 7\,x$
$B = 9 \times x \times 7 \times x$
$B = 9 \times 7 \times x \times x$
$\boxed{B = 63\,x^2}$

$C = (-5\,x + 4) \times (7\,x + 2) + x^2$
$C = -5\,x \times 7\,x - 5\,x \times 2 + 4 \times 7\,x + 4 \times 2 + x^2$
$C = -5 \times x \times 7 \times x - 5 \times x \times 2 + 4 \times 7 \times x + 8 + x^2$
$C = -5 \times 7 \times x \times x - 5 \times 2 \times x + 28\,x + x^2 + 8$
$C = -35\,x^2 - 10\,x + x^2 + 28\,x + 8$
$C = -35\,x^2 + x^2 - 10\,x + 28\,x + 8$
$C = (-35 + 1)\ x^2 + (-10 + 28)\ x + 8$
$\boxed{C = -34\,x^2 + 18\,x + 8}$

$D = 4\,x + 9 + (4\,x - 4) \times (-4\,x + 3)$
$D = 4\,x + 9 + 4\,x \times (-4\,x) + 4\,x \times 3 - 4 \times (-4\,x) - 4 \times 3$
$D = 4\,x + 9 + 4 \times x \times (-4) \times x + 4 \times x \times 3 - 4 \times (-4) \times x - 12$
$D = 4\,x + 9 + 4 \times (-4) \times x \times x + 4 \times 3 \times x + 16\,x - 12$

$D = 4\,x + 9 - 16\,x^2 + 12\,x + 16\,x - 12$
$D = -16\,x^2 + 4\,x + 12\,x + 16\,x + 9 - 12$
$D = -16\,x^2 + (4 + 12 + 16)\ x - 3$
$\boxed{D = -16\,x^2 + 32\,x - 3}$

$E = 6 + (-7\,x - 6) \times (5\,x - 3)$
$E = 6 - 7\,x \times 5\,x - 7\,x \times (-3) - 6 \times 5\,x - 6 \times (-3)$
$E = 6 - 7 \times x \times 5 \times x - 7 \times x \times (-3) - 6 \times 5 \times x + 18$
$E = 6 - 7 \times 5 \times x \times x - 7 \times (-3) \times x - 30\,x + 18$
$E = 6 - 35\,x^2 - (-21\,x) - 30\,x + 18$
$E = -35\,x^2 + 21\,x + 6 - 30\,x + 18$
$E = -35\,x^2 + 21\,x - 30\,x + 6 + 18$
$E = -35\,x^2 + (21 - 30)\ x + 24$
$\boxed{E = -35\,x^2 - 9\,x + 24}$