Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = -10\,x - 5 + (7\,x + 9) \times (7\,x - 10)$
$C = -10\,x - 5 + 7\,x \times 7\,x + 7\,x \times (-10) + 9 \times 7\,x + 9 \times (-10)$
$C = -10\,x - 5 + 7 \times x \times 7 \times x + 7 \times x \times (-10) + 9 \times 7 \times x - 90$
$C = -10\,x - 5 + 7 \times 7 \times x \times x + 7 \times (-10) \times x + 63\,x - 90$
$C = -10\,x - 5 + 49\,x^2 - 70\,x + 63\,x - 90$
$C = 49\,x^2 - 10\,x - 70\,x + 63\,x - 5 - 90$
$C = 49\,x^2 + (-10 - 70 + 63)\ x - 95$
$\boxed{C = 49\,x^2 - 17\,x - 95}$

$D = (8\,x + 10) \times (-8\,x - 8) + 5\,x^2$
$D = 8\,x \times (-8\,x) + 8\,x \times (-8) + 10 \times (-8\,x) + 10 \times (-8) + 5\,x^2$
$D = 8 \times x \times (-8) \times x + 8 \times x \times (-8) + 10 \times (-8) \times x - 80 + 5\,x^2$
$D = 8 \times (-8) \times x \times x + 8 \times (-8) \times x - 80\,x + 5\,x^2 - 80$
$D = -64\,x^2 - 64\,x + 5\,x^2 - 80\,x - 80$
$D = -64\,x^2 + 5\,x^2 - 64\,x - 80\,x - 80$
$D = (-64 + 5)\ x^2 + (-64 - 80)\ x - 80$
$\boxed{D = -59\,x^2 - 144\,x - 80}$

$E = -9 + (-2\,x + 4) \times (-x + 8)$
$E = -9 - 2\,x \times (-x) - 2\,x \times 8 + 4 \times (-x) + 4 \times 8$
$E = -9 - 2 \times x \times (-1) \times x - 2 \times x \times 8 + 4 \times (-1) \times x + 32$
$E = -9 - 2 \times (-1) \times x \times x - 2 \times 8 \times x - 4\,x + 32$
$E = -9 - (-2\,x^2) - 16\,x - 4\,x + 32$
$E = 2\,x^2 - 16\,x - 9 - 4\,x + 32$
$E = 2\,x^2 - 16\,x - 4\,x - 9 + 32$
$E = 2\,x^2 + (-16 - 4)\ x + 23$
$\boxed{E = 2\,x^2 - 20\,x + 23}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 9\,x \times 2\,x$
$B = 9 \times x \times 2 \times x$
$B = 9 \times 2 \times x \times x$
$\boxed{B = 18\,x^2}$

$C = 8\,x^2 + (3\,x - 3) \times (6\,x - 2)$
$C = 8\,x^2 + 3\,x \times 6\,x + 3\,x \times (-2) - 3 \times 6\,x - 3 \times (-2)$
$C = 8\,x^2 + 3 \times x \times 6 \times x + 3 \times x \times (-2) - 3 \times 6 \times x + 6$
$C = 8\,x^2 + 3 \times 6 \times x \times x + 3 \times (-2) \times x - 18\,x + 6$
$C = 8\,x^2 + 18\,x^2 - 6\,x - 18\,x + 6$

$C = (8+18)\,x^2 + (-6-18)\,x + 6$
$\boxed{C = 26\,x^2 - 24\,x + 6}$

$D = 6 + (-8\,x+2) \times (-2\,x+1)$
$D = 6 - 8\,x \times (-2\,x) - 8\,x \times 1 + 2 \times (-2\,x) + 2 \times 1$
$D = 6 - 8 \times x \times (-2) \times x - 8 \times x \times 1 + 2 \times (-2) \times x + 2$
$D = 6 - 8 \times (-2) \times x \times x - 8 \times x - 4\,x + 2$
$D = 6 - (-16\,x^2) - 8\,x - 4\,x + 2$
$D = 16\,x^2 - 8\,x + 6 - 4\,x + 2$
$D = 16\,x^2 - 8\,x - 4\,x + 6 + 2$
$D = 16\,x^2 + (-8-4)\,x + 8$
$\boxed{D = 16\,x^2 - 12\,x + 8}$

$E = (7\,x-4) \times (-7\,x+4) - 7\,x + 6$
$E = 7\,x \times (-7\,x) + 7\,x \times 4 - 4 \times (-7\,x) - 4 \times 4 - 7\,x + 6$
$E = 7 \times x \times (-7) \times x + 7 \times x \times 4 - 4 \times (-7) \times x - 16 - 7\,x + 6$
$E = 7 \times (-7) \times x \times x + 7 \times 4 \times x + 28\,x - 7\,x - 16 + 6$
$E = -49\,x^2 + 28\,x + (28-7)\,x - 10$
$E = -49\,x^2 + (28+28-7)\,x - 10$
$\boxed{E = -49\,x^2 + 49\,x - 10}$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = 7 + (-9\,x+4) \times (9\,x-3)$
$C = 7 - 9\,x \times 9\,x - 9\,x \times (-3) + 4 \times 9\,x + 4 \times (-3)$
$C = 7 - 9 \times x \times 9 \times x - 9 \times x \times (-3) + 4 \times 9 \times x - 12$
$C = 7 - 9 \times 9 \times x \times x - 9 \times (-3) \times x + 36\,x - 12$
$C = 7 - 81\,x^2 - (-27\,x) + 36\,x - 12$
$C = -81\,x^2 + 27\,x + 7 + 36\,x - 12$
$C = -81\,x^2 + 27\,x + 36\,x + 7 - 12$
$C = -81\,x^2 + (27+36)\,x - 5$
$\boxed{C = -81\,x^2 + 63\,x - 5}$

$D = x + 9 + (9\,x+7) \times (5\,x-9)$
$D = x + 9 + 9\,x \times 5\,x + 9\,x \times (-9) + 7 \times 5\,x + 7 \times (-9)$
$D = x + 9 + 9 \times x \times 5 \times x + 9 \times x \times (-9) + 7 \times 5 \times x - 63$
$D = x + 9 + 9 \times 5 \times x \times x + 9 \times (-9) \times x + 35\,x - 63$
$D = x + 9 + 45\,x^2 - 81\,x + 35\,x - 63$
$D = 45\,x^2 + x - 81\,x + 35\,x + 9 - 63$
$D = 45\,x^2 + (1-81+35)\,x - 54$
$\boxed{D = 45\,x^2 - 45\,x - 54}$

$E = (-4\,x+10) \times (-x-7) + 8\,x^2$
$E = -4\,x \times (-x) - 4\,x \times (-7) + 10 \times (-x) + 10 \times (-7) + 8\,x^2$

$E = -4 \times x \times (-1) \times x - 4 \times x \times (-7) + 10 \times (-1) \times x - 70 + 8\,x^2$
$E = -4 \times (-1) \times x \times x - 4 \times (-7) \times x - 10\,x + 8\,x^2 - 70$
$E = 4\,x^2 - (-28\,x) + 8\,x^2 - 10\,x - 70$
$E = 4\,x^2 + 28\,x + 8\,x^2 - 10\,x - 70$
$E = 4\,x^2 + 8\,x^2 + 28\,x - 10\,x - 70$
$E = (4 + 8)\ x^2 + (28 - 10)\ x - 70$
$\boxed{E = 12\,x^2 + 18\,x - 70}$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = 1 + (-3\,x - 7) \times (-3\,x + 5)$
$C = 1 - 3\,x \times (-3\,x) - 3\,x \times 5 - 7 \times (-3\,x) - 7 \times 5$
$C = 1 - 3 \times x \times (-3) \times x - 3 \times x \times 5 - 7 \times (-3) \times x - 35$
$C = 1 - 3 \times (-3) \times x \times x - 3 \times 5 \times x + 21\,x - 35$
$C = 1 - \left(-9\,x^2\right) - 15\,x + 21\,x - 35$
$C = 9\,x^2 - 15\,x + 1 + 21\,x - 35$
$C = 9\,x^2 - 15\,x + 21\,x + 1 - 35$
$C = 9\,x^2 + (-15 + 21)\ x - 34$
$\boxed{C = 9\,x^2 + 6\,x - 34}$

$D = (7\,x - 7) \times (7\,x + 4) + 3\,x + 1$
$D = 7\,x \times 7\,x + 7\,x \times 4 - 7 \times 7\,x - 7 \times 4 + 3\,x + 1$
$D = 7 \times x \times 7 \times x + 7 \times x \times 4 - 7 \times 7 \times x - 28 + 3\,x + 1$
$D = 7 \times 7 \times x \times x + 7 \times 4 \times x - 49\,x + 3\,x - 28 + 1$
$D = 49\,x^2 + 28\,x\,(-49 + 3)\ x - 27$
$D = 49\,x^2 + (28 + (-49) + 3)\ x - 27$
$\boxed{D = 49\,x^2 - 18\,x - 27}$

$E = (8\,x - 10) \times (3\,x + 5) + 6\,x^2$
$E = 8\,x \times 3\,x + 8\,x \times 5 - 10 \times 3\,x - 10 \times 5 + 6\,x^2$
$E = 8 \times x \times 3 \times x + 8 \times x \times 5 - 10 \times 3 \times x - 50 + 6\,x^2$
$E = 8 \times 3 \times x \times x + 8 \times 5 \times x - 30\,x + 6\,x^2 - 50$
$E = 24\,x^2 + 40\,x + 6\,x^2 - 30\,x - 50$
$E = 24\,x^2 + 6\,x^2 + 40\,x - 30\,x - 50$
$E = (24 + 6)\ x^2 + (40 - 30)\ x - 50$
$\boxed{E = 30\,x^2 + 10\,x - 50}$

Corrigé de l'exercice 5

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = (-x - 10) \times (-7\,x - 6) + 6$
$C = -x \times (-7\,x) - x \times (-6) - 10 \times (-7\,x) - 10 \times (-6) + 6$
$C = -1 \times x \times (-7) \times x - 1 \times x \times (-6) - 10 \times (-7) \times x + 60 + 6$
$C = -1 \times (-7) \times x \times x - 1 \times (-6) \times x + 70\,x + 66$
$C = 7\,x^2 - (-6\,x) + 70\,x + 66$
$C = 7\,x^2 + 6\,x + 70\,x + 66$
$C = 7\,x^2 + (6 + 70)\ x + 66$
$\boxed{C = 7\,x^2 + 76\,x + 66}$

$D = x^2 + (-2\,x + 3) \times (-3\,x + 7)$
$D = x^2 - 2\,x \times (-3\,x) - 2\,x \times 7 + 3 \times (-3\,x) + 3 \times 7$
$D = x^2 - 2 \times x \times (-3) \times x - 2 \times x \times 7 + 3 \times (-3) \times x + 21$
$D = x^2 - 2 \times (-3) \times x \times x - 2 \times 7 \times x - 9\,x + 21$
$D = x^2 - (-6\,x^2) - 14\,x - 9\,x + 21$
$D = 7\,x^2 - 14\,x - 9\,x + 21$
$D = 7\,x^2 + (-14 - 9)\ x + 21$
$\boxed{D = 7\,x^2 - 23\,x + 21}$

$E = (6\,x + 1) \times (8\,x + 10) - 10\,x + 10$
$E = 6\,x \times 8\,x + 6\,x \times 10 + 1 \times 8\,x + 1 \times 10 - 10\,x + 10$
$E = 6 \times x \times 8 \times x + 6 \times x \times 10 + 1 \times 8 \times x + 10 - 10\,x + 10$
$E = 6 \times 8 \times x \times x + 6 \times 10 \times x + 8\,x - 10\,x + 10 + 10$
$E = 48\,x^2 + 60\,x\,(8 - 10)\ x + 20$
$E = 48\,x^2 + (60 + 8 - 10)\ x + 20$
$\boxed{E = 48\,x^2 + 58\,x + 20}$

Corrigé de l'exercice 6

Développer et réduire chacune des expressions littérales suivantes :

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

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

$C = (8\,x + 5) \times (-8\,x + 2) - 6\,x + 5$
$C = 8\,x \times (-8\,x) + 8\,x \times 2 + 5 \times (-8\,x) + 5 \times 2 - 6\,x + 5$
$C = 8 \times x \times (-8) \times x + 8 \times x \times 2 + 5 \times (-8) \times x + 10 - 6\,x + 5$
$C = 8 \times (-8) \times x \times x + 8 \times 2 \times x - 40\,x - 6\,x + 10 + 5$
$C = -64\,x^2 + 16\,x\,(-40 - 6)\ x + 15$
$C = -64\,x^2 + (16 + (-40) - 6)\ x + 15$
$\boxed{C = -64\,x^2 - 30\,x + 15}$

$D = (-7\,x - 4) \times (-10\,x - 8) + 4\,x^2$
$D = -7\,x \times (-10\,x) - 7\,x \times (-8) - 4 \times (-10\,x) - 4 \times (-8) + 4\,x^2$

$D = -7 \times x \times (-10) \times x - 7 \times x \times (-8) - 4 \times (-10) \times x + 32 + 4\,x^2$
$D = -7 \times (-10) \times x \times x - 7 \times (-8) \times x + 40\,x + 4\,x^2 + 32$
$D = 70\,x^2 - (-56\,x) + 4\,x^2 + 40\,x + 32$
$D = 70\,x^2 + 56\,x + 4\,x^2 + 40\,x + 32$
$D = 70\,x^2 + 4\,x^2 + 56\,x + 40\,x + 32$
$D = (70 + 4)\ x^2 + (56 + 40)\ x + 32$
$\boxed{D = 74\,x^2 + 96\,x + 32}$

$E = (-x + 10) \times (3\,x - 5) - 4$
$E = -x \times 3\,x - x \times (-5) + 10 \times 3\,x + 10 \times (-5) - 4$
$E = -1 \times x \times 3 \times x - 1 \times x \times (-5) + 10 \times 3 \times x - 50 - 4$
$E = -1 \times 3 \times x \times x - 1 \times (-5) \times x + 30\,x - 54$
$E = -3\,x^2 - (-5\,x) + 30\,x - 54$
$E = -3\,x^2 + 5\,x + 30\,x - 54$
$E = -3\,x^2 + (5 + 30)\ x - 54$
$\boxed{E = -3\,x^2 + 35\,x - 54}$