Exercice 1

Développer et réduire chacune des expressions littérales suivantes :

$A = x \times 8\,x$
$B = 4\,x \times 4\,x$
$C = 7\,x - 10 + (-7\,x + 4) \times (3\,x - 4)$

$D = -2 + (-5\,x + 1) \times (-2\,x + 3)$
$E = (-10\,x - 2) \times (x + 9) + 4\,x^2$

Exercice 2

Développer et réduire chacune des expressions littérales suivantes :

$A = 9\,x \times x$
$B = 5\,x \times 6\,x$
$C = (-2\,x - 2) \times (-9\,x - 3) - 6\,x + 9$

$D = (9\,x + 4) \times (-4\,x + 6) + 6\,x^2$
$E = (-x + 4) \times (7\,x - 3) + 3$

Exercice 3

Développer et réduire chacune des expressions littérales suivantes :

$A = 6\,x \times x$
$B = 4\,x \times 3\,x$
$C = (-3\,x - 5) \times (-x - 7) - x - 10$

$D = x^2 + (-9\,x - 6) \times (3\,x - 2)$
$E = -10 + (-6\,x + 1) \times (-x + 3)$

Exercice 4

Développer et réduire chacune des expressions littérales suivantes :

$A = x \times 2\,x$
$B = 6\,x \times 7\,x$
$C = -10 + (3\,x - 5) \times (-x + 3)$

$D = (-7\,x + 3) \times (8\,x + 5) - 2\,x + 3$
$E = 10\,x^2 + (-4\,x - 8) \times (-4\,x - 8)$

Corrigé de l'exercice 1

Développer et réduire chacune des expressions littérales suivantes :

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

$B = 4\,x \times 4\,x$
$B = 4 \times x \times 4 \times x$
$B = 4 \times 4 \times x \times x$
$\boxed{B = 16\,x^2}$

$C = 7\,x - 10 + (-7\,x + 4) \times (3\,x - 4)$
$C = 7\,x - 10 - 7\,x \times 3\,x - 7\,x \times (-4) + 4 \times 3\,x + 4 \times (-4)$
$C = 7\,x - 10 - 7 \times x \times 3 \times x - 7 \times x \times (-4) + 4 \times 3 \times x - 16$
$C = 7\,x - 10 - 7 \times 3 \times x \times x - 7 \times (-4) \times x + 12\,x - 16$
$C = 7\,x - 10 - 21\,x^2 - (-28\,x) + 12\,x - 16$
$C = -21\,x^2 + 7\,x + 28\,x - 10 + 12\,x - 16$
$C = -21\,x^2 + 7\,x + 28\,x + 12\,x - 10 - 16$
$C = -21\,x^2 + (7 + 28 + 12)\,x - 26$
$\boxed{C = -21\,x^2 + 47\,x - 26}$

$D = -2 + (-5\,x + 1) \times (-2\,x + 3)$
$D = -2 - 5\,x \times (-2\,x) - 5\,x \times 3 + 1 \times (-2\,x) + 1 \times 3$
$D = -2 - 5 \times x \times (-2) \times x - 5 \times x \times 3 + 1 \times (-2) \times x + 3$
$D = -2 - 5 \times (-2) \times x \times x - 5 \times 3 \times x - 2\,x + 3$
$D = -2 - (-10\,x^2) - 15\,x - 2\,x + 3$
$D = 10\,x^2 - 15\,x - 2 - 2\,x + 3$
$D = 10\,x^2 - 15\,x - 2\,x - 2 + 3$
$D = 10\,x^2 + (-15 - 2)\,x + 1$
$\boxed{D = 10\,x^2 - 17\,x + 1}$

$E = (-10\,x - 2) \times (x + 9) + 4\,x^2$
$E = -10\,x \times x - 10\,x \times 9 - 2 \times x - 2 \times 9 + 4\,x^2$
$E = -10 \times x \times x - 10 \times x \times 9 - 2\,x - 18 + 4\,x^2$
$E = -10\,x^2 - 10 \times 9 \times x + 4\,x^2 - 2\,x - 18$
$E = -10\,x^2 - 90\,x + 4\,x^2 - 2\,x - 18$
$E = -10\,x^2 + 4\,x^2 - 90\,x - 2\,x - 18$
$E = (-10 + 4)\,x^2 + (-90 - 2)\,x - 18$
$\boxed{E = -6\,x^2 - 92\,x - 18}$

Corrigé de l'exercice 2

Développer et réduire chacune des expressions littérales suivantes :

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

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

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

$C = (-2\,x - 2) \times (-9\,x - 3) - 6\,x + 9$
$C = -2\,x \times (-9\,x) - 2\,x \times (-3) - 2 \times (-9\,x) - 2 \times (-3) - 6\,x + 9$

$C = -2 \times x \times (-9) \times x - 2 \times x \times (-3) - 2 \times (-9) \times x + 6 - 6\,x + 9$
$C = -2 \times (-9) \times x \times x - 2 \times (-3) \times x + 18\,x - 6\,x + 6 + 9$
$C = 18\,x^2 - (-6\,x) + (18 - 6)\ x + 15$
$C = 18\,x^2 + 6\,x + (18 - 6)\ x + 15$
$C = 18\,x^2 + (6 + 18 - 6)\ x + 15$

$$\boxed{C = 18\,x^2 + 18\,x + 15}$$

$D = (9\,x + 4) \times (-4\,x + 6) + 6\,x^2$
$D = 9\,x \times (-4\,x) + 9\,x \times 6 + 4 \times (-4\,x) + 4 \times 6 + 6\,x^2$
$D = 9 \times x \times (-4) \times x + 9 \times x \times 6 + 4 \times (-4) \times x + 24 + 6\,x^2$
$D = 9 \times (-4) \times x \times x + 9 \times 6 \times x - 16\,x + 6\,x^2 + 24$
$D = -36\,x^2 + 54\,x + 6\,x^2 - 16\,x + 24$
$D = -36\,x^2 + 6\,x^2 + 54\,x - 16\,x + 24$
$D = (-36 + 6)\ x^2 + (54 - 16)\ x + 24$

$$\boxed{D = -30\,x^2 + 38\,x + 24}$$

$E = (-x + 4) \times (7\,x - 3) + 3$
$E = -x \times 7\,x - x \times (-3) + 4 \times 7\,x + 4 \times (-3) + 3$
$E = -1 \times x \times 7 \times x - 1 \times x \times (-3) + 4 \times 7 \times x - 12 + 3$
$E = -1 \times 7 \times x \times x - 1 \times (-3) \times x + 28\,x - 9$
$E = -7\,x^2 - (-3\,x) + 28\,x - 9$
$E = -7\,x^2 + 3\,x + 28\,x - 9$
$E = -7\,x^2 + (3 + 28)\ x - 9$

$$\boxed{E = -7\,x^2 + 31\,x - 9}$$

Corrigé de l'exercice 3

Développer et réduire chacune des expressions littérales suivantes :

$A = 6\,x \times x$
$A = 6 \times x \times x$

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

$B = 4\,x \times 3\,x$
$B = 4 \times x \times 3 \times x$
$B = 4 \times 3 \times x \times x$

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

$C = (-3\,x - 5) \times (-x - 7) - x - 10$
$C = -3\,x \times (-x) - 3\,x \times (-7) - 5 \times (-x) - 5 \times (-7) - x - 10$
$C = -3 \times x \times (-1) \times x - 3 \times x \times (-7) - 5 \times (-1) \times x + 35 - x - 10$
$C = -3 \times (-1) \times x \times x - 3 \times (-7) \times x + 5\,x - x + 35 - 10$
$C = 3\,x^2 - (-21\,x) + (5 - 1)\ x + 25$
$C = 3\,x^2 + 21\,x + (5 - 1)\ x + 25$
$C = 3\,x^2 + (21 + 5 - 1)\ x + 25$

$$\boxed{C = 3\,x^2 + 25\,x + 25}$$

$D = x^2 + (-9\,x - 6) \times (3\,x - 2)$
$D = x^2 - 9\,x \times 3\,x - 9\,x \times (-2) - 6 \times 3\,x - 6 \times (-2)$
$D = x^2 - 9 \times x \times 3 \times x - 9 \times x \times (-2) - 6 \times 3 \times x + 12$
$D = x^2 - 9 \times 3 \times x \times x - 9 \times (-2) \times x - 18\,x + 12$
$D = x^2 - 27\,x^2 - (-18\,x) - 18\,x + 12$
$D = -26\,x^2 + 18\,x - 18\,x + 12$

$D = -26\,x^2 + (18 - 18)\,x + 12$

$$\boxed{D = -26\,x^2 + 12}$$

$E = -10 + (-6\,x + 1) \times (-x + 3)$
$E = -10 - 6\,x \times (-x) - 6\,x \times 3 + 1 \times (-x) + 1 \times 3$
$E = -10 - 6 \times x \times (-1) \times x - 6 \times x \times 3 + 1 \times (-1) \times x + 3$
$E = -10 - 6 \times (-1) \times x \times x - 6 \times 3 \times x - x + 3$
$E = -10 - (-6\,x^2) - 18\,x - x + 3$
$E = 6\,x^2 - 18\,x - 10 - x + 3$
$E = 6\,x^2 - 18\,x - x - 10 + 3$
$E = 6\,x^2 + (-18 - 1)\,x - 7$

$$\boxed{E = 6\,x^2 - 19\,x - 7}$$

Corrigé de l'exercice 4

Développer et réduire chacune des expressions littérales suivantes :

$A = x \times 2\,x$
$A = x \times 2 \times x$
$A = 2 \times x \times x$

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

$B = 6\,x \times 7\,x$
$B = 6 \times x \times 7 \times x$
$B = 6 \times 7 \times x \times x$

$$\boxed{B = 42\,x^2}$$

$C = -10 + (3\,x - 5) \times (-x + 3)$
$C = -10 + 3\,x \times (-x) + 3\,x \times 3 - 5 \times (-x) - 5 \times 3$
$C = -10 + 3 \times x \times (-1) \times x + 3 \times x \times 3 - 5 \times (-1) \times x - 15$
$C = -10 + 3 \times (-1) \times x \times x + 3 \times 3 \times x + 5\,x - 15$
$C = -10 - 3\,x^2 + 9\,x + 5\,x - 15$
$C = -3\,x^2 + 9\,x + 5\,x - 10 - 15$
$C = -3\,x^2 + (9 + 5)\,x - 25$

$$\boxed{C = -3\,x^2 + 14\,x - 25}$$

$D = (-7\,x + 3) \times (8\,x + 5) - 2\,x + 3$
$D = -7\,x \times 8\,x - 7\,x \times 5 + 3 \times 8\,x + 3 \times 5 - 2\,x + 3$
$D = -7 \times x \times 8 \times x - 7 \times x \times 5 + 3 \times 8 \times x + 15 - 2\,x + 3$
$D = -7 \times 8 \times x \times x - 7 \times 5 \times x + 24\,x - 2\,x + 15 + 3$
$D = -56\,x^2 - 35\,x + (24 - 2)\,x + 18$
$D = -56\,x^2 + (-35 + 24 - 2)\,x + 18$

$$\boxed{D = -56\,x^2 - 13\,x + 18}$$

$E = 10\,x^2 + (-4\,x - 8) \times (-4\,x - 8)$
$E = 10\,x^2 + (4\,x)^2 + 2 \times 4\,x \times 8 + 8^2$
$E = 10\,x^2 + 16\,x^2 + 2 \times 4 \times x \times 8 + 64$
$E = (10 + 16)\,x^2 + 2 \times 4 \times 8 \times x + 64$
$E = (10 + 16)\,x^2 + 64\,x + 64$

$$\boxed{E = 26\,x^2 + 64\,x + 64}$$