Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

$A = (4\,x - 3) \times (3\,x + 4)$
$A = 4\,x \times 3\,x + 4\,x \times 4 - 3 \times 3\,x - 3 \times 4$
$A = 12\,x^2 + 16\,x - 9\,x - 12$
$A = 12\,x^2 + (16 - 9)\,x - 12$
$\boxed{A = 12\,x^2 + 7\,x - 12}$

$B = (3\,x + 4)^2$
$B = (3\,x)^2 + 2 \times 3\,x \times 4 + 4^2$
$\boxed{B = 9\,x^2 + 24\,x + 16}$

$C = (5\,x - 5) \times (5\,x + 5)$
$C = (5\,x)^2 - 5^2$
$\boxed{C = 25\,x^2 - 25}$

$D = (8\,x - 4)^2$

$D = (8\,x)^2 - 2 \times 8\,x \times 4 + 4^2$
$\boxed{D = 64\,x^2 - 64\,x + 16}$

$E = \left(\dfrac{5}{4}\,x + \dfrac{1}{3}\right) \times \left(\dfrac{5}{4}\,x - \dfrac{1}{3}\right)$
$E = \left(\dfrac{5}{4}\,x\right)^2 - \left(\dfrac{1}{3}\right)^2$
$\boxed{E = \dfrac{25}{16}\,x^2 - \dfrac{1}{9}}$

$F = -(8\,x + 6)^2$
$F = -\left((8\,x)^2 + 2 \times 8\,x \times 6 + 6^2\right)$
$F = -(64\,x^2 + 96\,x + 36)$
$\boxed{F = -64\,x^2 - 96\,x - 36}$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

$A = (8\,x + 10) \times (8\,x - 10)$
$A = (8\,x)^2 - 10^2$
$\boxed{A = 64\,x^2 - 100}$

$B = (2\,x - 4)^2$
$B = (2\,x)^2 - 2 \times 2\,x \times 4 + 4^2$
$\boxed{B = 4\,x^2 - 16\,x + 16}$

$C = (x + 1)^2$
$C = x^2 + 2 \times x \times 1 + 1^2$
$\boxed{C = x^2 + 2\,x + 1}$

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

$E = \left(\dfrac{1}{6}\,x + \dfrac{1}{9}\right)^2$
$E = \left(\dfrac{1}{6}\,x\right)^2 + 2 \times \dfrac{1}{6}\,x \times \dfrac{1}{9} + \left(\dfrac{1}{9}\right)^2$
$E = \dfrac{1}{36}\,x^2 + \dfrac{1 \times \cancel{2}}{27 \times \cancel{2}}\,x + \dfrac{1}{81}$
$\boxed{E = \dfrac{1}{36}\,x^2 + \dfrac{1}{27}\,x + \dfrac{1}{81}}$

$F = -(4\,x + 6) \times (4\,x - 6)$
$F = -\left((4\,x)^2 - 6^2\right)$
$F = -(16\,x^2 - 36)$
$\boxed{F = -16\,x^2 + 36}$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

$A = (7\,x - 6)^2$
$A = (7\,x)^2 - 2 \times 7\,x \times 6 + 6^2$
$\boxed{A = 49\,x^2 - 84\,x + 36}$

$B = (6\,x + 10) \times (10\,x - 6)$
$B = 6\,x \times 10\,x + 6\,x \times (-6) + 10 \times 10\,x + 10 \times (-6)$
$B = 60\,x^2 - 36\,x + 100\,x - 60$
$B = 60\,x^2 + (-36 + 100)\,x - 60$

$\boxed{B = 60\,x^2 + 64\,x - 60}$

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

$D = (6\,x + 1)^2$
$D = (6\,x)^2 + 2 \times 6\,x \times 1 + 1^2$

$$D = 36\,x^2 + 12\,x + 1$$

$E = -(8\,x + 1)^2$
$E = -\left((8\,x)^2 + 2 \times 8\,x \times 1 + 1^2\right)$
$E = -\left(64\,x^2 + 16\,x + 1\right)$

$$E = -64\,x^2 - 16\,x - 1$$

$F = \left(\dfrac{1}{5}\,x + 4\right) \times \left(4\,x - \dfrac{1}{5}\right)$
$F = \dfrac{1}{5}\,x \times 4\,x + \dfrac{1}{5}\,x \times \left(-\dfrac{1}{5}\right) + 4 \times 4\,x + 4 \times \left(-\dfrac{1}{5}\right)$

$F = \dfrac{4}{5}\,x^2 - \dfrac{1}{25}\,x + 16\,x - \dfrac{4}{5}$
$F = \dfrac{4}{5}\,x^2 + \left(\dfrac{-1}{25} + 16\right)\,x - \dfrac{4}{5}$
$F = \dfrac{4}{5}\,x^2 + \left(\dfrac{-1}{25} + \dfrac{16_{\times 25}}{1_{\times 25}}\right)\,x - \dfrac{4}{5}$
$F = \dfrac{4}{5}\,x^2 + \left(\dfrac{-1}{25} + \dfrac{400}{25}\right)\,x - \dfrac{4}{5}$

$$F = \dfrac{4}{5}\,x^2 + \dfrac{399}{25}\,x - \dfrac{4}{5}$$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

$A = (3\,x - 2) \times (3\,x + 2)$
$A = (3\,x)^2 - 2^2$

$$A = 9\,x^2 - 4$$

$B = (9\,x - 6) \times (6\,x + 9)$
$B = 9\,x \times 6\,x + 9\,x \times 9 - 6 \times 6\,x - 6 \times 9$
$B = 54\,x^2 + 81\,x - 36\,x - 54$
$B = 54\,x^2 + (81 - 36)\,x - 54$

$$B = 54\,x^2 + 45\,x - 54$$

$C = (x + 8)^2$
$C = x^2 + 2 \times x \times 8 + 8^2$

$$C = x^2 + 16\,x + 64$$

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

$$D = 49\,x^2 - 140\,x + 100$$

$E = \left(\dfrac{9}{10}\,x + \dfrac{2}{5}\right)^2$
$E = \left(\dfrac{9}{10}\,x\right)^2 + 2 \times \dfrac{9}{10}\,x \times \dfrac{2}{5} + \left(\dfrac{2}{5}\right)^2$
$E = \dfrac{81}{100}\,x^2 + \dfrac{18 \times \cancel{2}}{25 \times \cancel{2}}\,x + \dfrac{4}{25}$

$$E = \dfrac{81}{100}\,x^2 + \dfrac{18}{25}\,x + \dfrac{4}{25}$$

$F = -(3\,x + 3) \times (3\,x - 3)$
$F = -\left((3\,x)^2 - 3^2\right)$
$F = -(9\,x^2 - 9)$

$$F = -9\,x^2 + 9$$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

$A = (6\,x - 9)^2$
$A = (6\,x)^2 - 2 \times 6\,x \times 9 + 9^2$

$$A = 36\,x^2 - 108\,x + 81$$

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

$$B = 24\,x^2 + 20\,x - 24$$

$C = (x + 1) \times (x - 1)$
$C = x^2 - 1^2$

$$C = x^2 - 1$$

$D = (3\,x + 5)^2$
$D = (3\,x)^2 + 2 \times 3\,x \times 5 + 5^2$

$$D = 9\,x^2 + 30\,x + 25$$

$E = \left(\dfrac{8}{3}\,x - \dfrac{9}{2}\right)^2$
$E = \left(\dfrac{8}{3}\,x\right)^2 + 2 \times \dfrac{8}{3}\,x \times \dfrac{9}{2} + \left(\dfrac{9}{2}\right)^2$
$E = \dfrac{64}{9}\,x^2 + \dfrac{24 \times \cancel{6}}{1 \times \cancel{6}}\,x + \dfrac{81}{4}$

$$E = \dfrac{64}{9}\,x^2 + 24\,x + \dfrac{81}{4}$$

$F = -(10\,x + 6)^2$
$F = -\left((10\,x)^2 + 2 \times 10\,x \times 6 + 6^2\right)$
$F = -(100\,x^2 + 120\,x + 36)$

$$F = -100\,x^2 - 120\,x - 36$$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

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

$B = (3\,x + 1) \times (3\,x - 1)$
$B = (3\,x)^2 - 1^2$
$\boxed{B = 9\,x^2 - 1}$

$C = (9\,x + 5) \times (5\,x - 9)$
$C = 9\,x \times 5\,x + 9\,x \times (-9) + 5 \times 5\,x + 5 \times (-9)$
$C = 45\,x^2 - 81\,x + 25\,x - 45$
$C = 45\,x^2 + (-81 + 25)\,x - 45$
$\boxed{C = 45\,x^2 - 56\,x - 45}$

$D = (x + 7)^2$
$D = x^2 + 2 \times x \times 7 + 7^2$
$\boxed{D = x^2 + 14\,x + 49}$

$E = -\,(5\,x - 4) \times (5\,x + 4)$
$E = -\left((5\,x)^2 - 4^2\right)$
$E = -\left(25\,x^2 - 16\right)$
$\boxed{E = -25\,x^2 + 16}$

$F = \left(\dfrac{1}{8}\,x + \dfrac{3}{7}\right) \times \left(\dfrac{3}{7}\,x - \dfrac{1}{8}\right)$
$F = \dfrac{1}{8}\,x \times \dfrac{3}{7}\,x + \dfrac{1}{8}\,x \times \left(-\dfrac{1}{8}\right) + \dfrac{3}{7} \times \dfrac{3}{7}\,x + \dfrac{3}{7} \times \left(-\dfrac{1}{8}\right)$
$F = \dfrac{3}{56}\,x^2 - \dfrac{1}{64}\,x + \dfrac{9}{49}\,x - \dfrac{3}{56}$
$F = \dfrac{3}{56}\,x^2 + \left(\dfrac{-1}{64} + \dfrac{9}{49}\right)\,x - \dfrac{3}{56}$
$F = \dfrac{3}{56}\,x^2 + \left(\dfrac{-1_{\times 49}}{64_{\times 49}} + \dfrac{9_{\times 64}}{49_{\times 64}}\right)\,x - \dfrac{3}{56}$
$F = \dfrac{3}{56}\,x^2 + \left(\dfrac{-49}{3136} + \dfrac{576}{3136}\right)\,x - \dfrac{3}{56}$
$\boxed{F = \dfrac{3}{56}\,x^2 + \dfrac{527}{3136}\,x - \dfrac{3}{56}}$