Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

$A = (9\,x + 10) \times (10\,x - 9)$
$A = 9\,x \times 10\,x + 9\,x \times (-9) + 10 \times 10\,x + 10 \times (-9)$
$A = 90\,x^2 - 81\,x + 100\,x - 90$
$A = 90\,x^2 + (-81 + 100)\,x - 90$
$\boxed{A = 90\,x^2 + 19\,x - 90}$

$B = (7\,x - 9)^2$
$B = (7\,x)^2 - 2 \times 7\,x \times 9 + 9^2$
$\boxed{B = 49\,x^2 - 126\,x + 81}$

$C = (9\,x - 1) \times (9\,x + 1)$
$C = (9\,x)^2 - 1^2$
$\boxed{C = 81\,x^2 - 1}$

$D = (4\,x + 1)^2$
$D = (4\,x)^2 + 2 \times 4\,x \times 1 + 1^2$

$\boxed{D = 16\,x^2 + 8\,x + 1}$

$E = -\,(10\,x - 8) \times (8\,x + 10)$
$E = -\,(10\,x \times 8\,x + 10\,x \times 10 - 8 \times 8\,x - 8 \times 10)$
$E = -\,(80\,x^2 + 100\,x - 64\,x - 80)$
$E = -\,(80\,x^2 + (100 - 64)\,x - 80)$
$E = -\,(80\,x^2 + 36\,x - 80)$
$\boxed{E = -80\,x^2 - 36\,x + 80}$

$F = \left(\dfrac{8}{7}\,x + \dfrac{5}{7}\right)^2$
$F = \left(\dfrac{8}{7}\,x\right)^2 + 2 \times \dfrac{8}{7}\,x \times \dfrac{5}{7} + \left(\dfrac{5}{7}\right)^2$
$\boxed{F = \dfrac{64}{49}\,x^2 + \dfrac{80}{49}\,x + \dfrac{25}{49}}$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

$A = (2\,x - 6) \times (2\,x + 6)$
$A = (2\,x)^2 - 6^2$
$\boxed{A = 4\,x^2 - 36}$

$B = (x - 6)^2$
$B = x^2 - 2 \times x \times 6 + 6^2$
$\boxed{B = x^2 - 12\,x + 36}$

$C = (8\,x + 3) \times (3\,x - 8)$
$C = 8\,x \times 3\,x + 8\,x \times (-8) + 3 \times 3\,x + 3 \times (-8)$
$C = 24\,x^2 - 64\,x + 9\,x - 24$
$C = 24\,x^2 + (-64 + 9)\,x - 24$
$\boxed{C = 24\,x^2 - 55\,x - 24}$

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

$D = (10\,x)^2 + 2 \times 10\,x \times 2 + 2^2$
$\boxed{D = 100\,x^2 + 40\,x + 4}$

$E = \left(\dfrac{8}{7}\,x - \dfrac{8}{3}\right)^2$
$E = \left(\dfrac{8}{7}\,x\right)^2 - 2 \times \dfrac{8}{7}\,x \times \dfrac{8}{3} + \left(\dfrac{8}{3}\right)^2$
$\boxed{E = \dfrac{64}{49}\,x^2 - \dfrac{128}{21}\,x + \dfrac{64}{9}}$

$F = -\,(9\,x - 2) \times (9\,x + 2)$
$F = -\left((9\,x)^2 - 2^2\right)$
$F = -\,(81\,x^2 - 4)$
$\boxed{F = -81\,x^2 + 4}$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

$A = (7\,x + 10) \times (10\,x - 7)$
$A = 7\,x \times 10\,x + 7\,x \times (-7) + 10 \times 10\,x + 10 \times (-7)$
$A = 70\,x^2 - 49\,x + 100\,x - 70$
$A = 70\,x^2 + (-49 + 100)\,x - 70$
$\boxed{A = 70\,x^2 + 51\,x - 70}$

$B = (2\,x + 10) \times (2\,x - 10)$

$B = (2\,x)^2 - 10^2$
$\boxed{B = 4\,x^2 - 100}$

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

$D = (5\,x + 7)^2$
$D = (5\,x)^2 + 2 \times 5\,x \times 7 + 7^2$
$\boxed{D = 25\,x^2 + 70\,x + 49}$

$E = -\,(9\,x - 4)^2$
$E = -\left((9\,x)^2 - 2 \times 9\,x \times 4 + 4^2\right)$
$E = -\,(81\,x^2 - 72\,x + 16)$

$\boxed{E = -81\,x^2 + 72\,x - 16}$

$F = \left(\dfrac{1}{10}\,x - \dfrac{4}{5}\right) \times \left(\dfrac{1}{10}\,x + \dfrac{4}{5}\right)$

$F = \left(\dfrac{1}{10}\,x\right)^2 - \left(\dfrac{4}{5}\right)^2$

$\boxed{F = \dfrac{1}{100}\,x^2 - \dfrac{16}{25}}$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

$A = (x + 9) \times (x - 9)$
$A = x^2 - 9^2$
$\boxed{A = x^2 - 81}$

$B = (8\,x + 7) \times (7\,x - 8)$
$B = 8\,x \times 7\,x + 8\,x \times (-8) + 7 \times 7\,x + 7 \times (-8)$
$B = 56\,x^2 - 64\,x + 49\,x - 56$
$B = 56\,x^2 + (-64 + 49)\,x - 56$
$\boxed{B = 56\,x^2 - 15\,x - 56}$

$C = (8\,x + 3)^2$
$C = (8\,x)^2 + 2 \times 8\,x \times 3 + 3^2$
$\boxed{C = 64\,x^2 + 48\,x + 9}$

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

$\boxed{D = 4\,x^2 - 8\,x + 4}$

$E = \left(4\,x + \dfrac{5}{3}\right)^2$

$E = (4\,x)^2 + 2 \times 4\,x \times \dfrac{5}{3} + \left(\dfrac{5}{3}\right)^2$

$\boxed{E = 16\,x^2 + \dfrac{40}{3}\,x + \dfrac{25}{9}}$

$F = -\,(5\,x + 4) \times (4\,x - 5)$
$F = -\,(5\,x \times 4\,x + 5\,x \times (-5) + 4 \times 4\,x + 4 \times (-5))$
$F = -\,(20\,x^2 - 25\,x + 16\,x - 20)$
$F = -\,(20\,x^2 + (-25 + 16)\,x - 20)$
$F = -\,(20\,x^2 - 9\,x - 20)$
$\boxed{F = -20\,x^2 + 9\,x + 20}$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

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

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

$C = (2\,x + 2)^2$
$C = (2\,x)^2 + 2 \times 2\,x \times 2 + 2^2$
$\boxed{C = 4\,x^2 + 8\,x + 4}$

$D = (9\,x - 4)^2$
$D = (9\,x)^2 - 2 \times 9\,x \times 4 + 4^2$

$\boxed{D = 81\,x^2 - 72\,x + 16}$

$E = -\,(10\,x + 9)^2$
$E = -\left((10\,x)^2 + 2 \times 10\,x \times 9 + 9^2\right)$
$E = -\,(100\,x^2 + 180\,x + 81)$
$\boxed{E = -100\,x^2 - 180\,x - 81}$

$F = \left(\dfrac{7}{9}\,x - \dfrac{7}{6}\right)^2$

$F = \left(\dfrac{7}{9}\,x\right)^2 - 2 \times \dfrac{7}{9}\,x \times \dfrac{7}{6} + \left(\dfrac{7}{6}\right)^2$

$F = \dfrac{49}{81}\,x^2 - \dfrac{49 \times \cancel{2}}{27 \times \cancel{2}}\,x + \dfrac{49}{36}$

$\boxed{F = \dfrac{49}{81}\,x^2 - \dfrac{49}{27}\,x + \dfrac{49}{36}}$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

$A = (3\,x + 9)^2$
$A = (3\,x)^2 + 2 \times 3\,x \times 9 + 9^2$
$\boxed{A = 9\,x^2 + 54\,x + 81}$

$B = (3\,x - 8) \times (3\,x + 8)$
$B = (3\,x)^2 - 8^2$
$\boxed{B = 9\,x^2 - 64}$

$C = (2\,x - 10)^2$
$C = (2\,x)^2 - 2 \times 2\,x \times 10 + 10^2$
$\boxed{C = 4\,x^2 - 40\,x + 100}$

$D = (5\,x + 6) \times (6\,x - 5)$
$D = 5\,x \times 6\,x + 5\,x \times (-5) + 6 \times 6\,x + 6 \times (-5)$
$D = 30\,x^2 - 25\,x + 36\,x - 30$
$D = 30\,x^2 + (-25 + 36)\,x - 30$
$\boxed{D = 30\,x^2 + 11\,x - 30}$

$E = -\,(6\,x - 5)^2$
$E = -\left((6\,x)^2 - 2 \times 6\,x \times 5 + 5^2\right)$
$E = -\,(36\,x^2 - 60\,x + 25)$
$\boxed{E = -36\,x^2 + 60\,x - 25}$

$F = \left(\dfrac{5}{9}\,x + \dfrac{5}{6}\right) \times \left(\dfrac{5}{6}\,x - \dfrac{5}{9}\right)$
$F = \dfrac{5}{9}\,x \times \dfrac{5}{6}\,x + \dfrac{5}{9}\,x \times \left(-\dfrac{5}{9}\right) + \dfrac{5}{6} \times \dfrac{5}{6}\,x + \dfrac{5}{6} \times \left(-\dfrac{5}{9}\right)$
$F = \dfrac{25}{54}\,x^2 + -\dfrac{25}{81}\,x + \dfrac{25}{36}\,x + -\dfrac{25}{54}$
$F = \dfrac{25}{54}\,x^2 + \left(\dfrac{-25}{81} + \dfrac{25}{36}\right)\,x - \dfrac{25}{54}$
$F = \dfrac{25}{54}\,x^2 + \left(\dfrac{-25_{\times 4}}{81_{\times 4}} + \dfrac{25_{\times 9}}{36_{\times 9}}\right)\,x - \dfrac{25}{54}$
$F = \dfrac{25}{54}\,x^2 + \left(\dfrac{-100}{324} + \dfrac{225}{324}\right)\,x - \dfrac{25}{54}$
$\boxed{F = \dfrac{25}{54}\,x^2 + \dfrac{125}{324}\,x - \dfrac{25}{54}}$