Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

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

$B = (7x - 3) \times (3x + 7)$
$B = 7x \times 3x + 7x \times 7 - 3 \times 3x - 3 \times 7$
$B = 21x^2 + 49x - 9x - 21$
$B = 21x^2 + (49 - 9)\,x - 21$
$\boxed{B = 21x^2 + 40x - 21}$

$C = (x - 3)^2$
$C = x^2 - 2 \times x \times 3 + 3^2$
$\boxed{C = x^2 - 6x + 9}$

$D = (6x + 5)^2$
$D = (6x)^2 + 2 \times 6x \times 5 + 5^2$
$\boxed{D = 36x^2 + 60x + 25}$

$E = \left(\frac{7}{2}x + \frac{8}{3}\right) \times \left(\frac{7}{2}x - \frac{8}{3}\right)$
$E = \left(\frac{7}{2}x\right)^2 - \left(\frac{8}{3}\right)^2$
$\boxed{E = \frac{49}{4}x^2 - \frac{64}{9}}$

$F = -(10x + 1)^2$
$F = -\left((10x)^2 + 2 \times 10x \times 1 + 1^2\right)$
$F = -(100x^2 + 20x + 1)$
$\boxed{F = -100x^2 - 20x - 1}$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

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

$B = (3x + 5)^2$
$B = (3x)^2 + 2 \times 3x \times 5 + 5^2$
$\boxed{B = 9x^2 + 30x + 25}$

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

$D = (6x + 10) \times (6x - 10)$
$D = (6x)^2 - 10^2$
$\boxed{D = 36x^2 - 100}$

$E = \left(\frac{1}{7}x + \frac{7}{10}\right)^2$
$E = \left(\frac{1}{7}x\right)^2 + 2 \times \frac{1}{7}x \times \frac{7}{10} + \left(\frac{7}{10}\right)^2$
$E = \frac{1}{49}x^2 + \frac{1 \times \cancel{14}}{5 \times \cancel{14}}x + \frac{49}{100}$
$\boxed{E = \frac{1}{49}x^2 + \frac{1}{5}x + \frac{49}{100}}$

$F = -(10x - 10) \times (10x + 10)$
$F = -\left((10x)^2 - 10^2\right)$
$F = -(100x^2 - 100)$
$\boxed{F = -100x^2 + 100}$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

$A = (10x - 4) \times (10x + 4)$
$A = (10x)^2 - 4^2$
$\boxed{A = 100x^2 - 16}$

$B = (x + 6) \times (6x - 1)$
$B = x \times 6x + x \times (-1) + 6 \times 6x + 6 \times (-1)$
$B = 6x^2 - x + 36x - 6$
$B = 6x^2 + (-1 + 36)\,x - 6$
$\boxed{B = 6x^2 + 35x - 6}$

$C = (9x - 8)^2$
$C = (9x)^2 - 2 \times 9x \times 8 + 8^2$
$\boxed{C = 81x^2 - 144x + 64}$

$D = (7x+7)^2$
$D = (7x)^2 + 2 \times 7x \times 7 + 7^2$
$\boxed{D = 49x^2 + 98x + 49}$

$E = -(10x-4)^2$
$E = -\left((10x)^2 - 2 \times 10x \times 4 + 4^2\right)$
$E = -(100x^2 - 80x + 16)$
$\boxed{E = -100x^2 + 80x - 16}$

$F = \left(\frac{2}{9}x - \frac{3}{2}\right) \times \left(\frac{3}{2}x + \frac{2}{9}\right)$
$F = \frac{2}{9}x \times \frac{3}{2}x + \frac{2}{9}x \times \frac{2}{9} - \frac{3}{2} \times \frac{3}{2}x - \frac{3}{2} \times \frac{2}{9}$
$F = \frac{1 \times \cancel{6}}{3 \times \cancel{6}}x^2 + \frac{4}{81}x - \frac{9}{4}x - \frac{1 \times \cancel{6}}{3 \times \cancel{6}}$
$F = \frac{1 \times \cancel{6}}{3 \times \cancel{6}}x^2 + \left(\frac{4}{81} - \frac{9}{4}\right)x - \frac{1 \times \cancel{6}}{3 \times \cancel{6}}$
$F = \frac{1}{3}x^2 + \left(\frac{4_{\times 4}}{81_{\times 4}} - \frac{9_{\times 81}}{4_{\times 81}}\right)x - \frac{1}{3}$
$F = \frac{1}{3}x^2 + \left(\frac{16}{324} - \frac{729}{324}\right)x - \frac{1}{3}$
$\boxed{F = \frac{1}{3}x^2 - \frac{713}{324}x - \frac{1}{3}}$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

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

$B = (8x-1) \times (8x+1)$
$B = (8x)^2 - 1^2$
$\boxed{B = 64x^2 - 1}$

$C = (4x+7) \times (7x-4)$
$C = 4x \times 7x + 4x \times (-4) + 7 \times 7x + 7 \times (-4)$
$C = 28x^2 - 16x + 49x - 28$
$C = 28x^2 + (-16+49)\,x - 28$
$\boxed{C = 28x^2 + 33x - 28}$

$D = (8x-10)^2$
$D = (8x)^2 - 2 \times 8x \times 10 + 10^2$
$\boxed{D = 64x^2 - 160x + 100}$

$E = \left(x - \frac{5}{3}\right)^2$
$E = x^2 - 2 \times x \times \frac{5}{3} + \left(\frac{5}{3}\right)^2$
$E = x^2 - \left(2 \times x \times \frac{5}{3}\right) + \frac{25}{9}$
$\boxed{E = x^2 - \frac{10}{3}x + \frac{25}{9}}$

$F = -(10x+1)^2$
$F = -\left((10x)^2 + 2 \times 10x \times 1 + 1^2\right)$
$F = -(100x^2 + 20x + 1)$
$\boxed{F = -100x^2 - 20x - 1}$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

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

$B = (9x-5)^2$
$B = (9x)^2 - 2 \times 9x \times 5 + 5^2$
$\boxed{B = 81x^2 - 90x + 25}$

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

$D = (6x+1)^2$
$D = (6x)^2 + 2 \times 6x \times 1 + 1^2$
$\boxed{D = 36x^2 + 12x + 1}$

$E = -(2x+1) \times (x-2)$
$E = -(2x \times x + 2x \times (-2) + 1 \times x + 1 \times (-2))$
$E = -(2x^2 - 4x + x - 2)$
$E = -(2x^2 + (-4+1)\,x - 2)$
$E = -(2x^2 - 3x - 2)$
$\boxed{E = -2x^2 + 3x + 2}$

$F = \left(\frac{7}{2}x - 3\right) \times \left(\frac{7}{2}x + 3\right)$
$F = \left(\frac{7}{2}x\right)^2 - 3^2$

$\boxed{F = \frac{49}{4}x^2 - 9}$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

$A = (10x + 4)^2$
$A = (10x)^2 + 2 \times 10x \times 4 + 4^2$
$\boxed{A = 100x^2 + 80x + 16}$

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

$C = (4x + 6) \times (6x - 4)$
$C = 4x \times 6x + 4x \times (-4) + 6 \times 6x + 6 \times (-4)$
$C = 24x^2 - 16x + 36x - 24$
$C = 24x^2 + (-16 + 36)\ x - 24$
$\boxed{C = 24x^2 + 20x - 24}$

$D = (5x + 9) \times (5x - 9)$
$D = (5x)^2 - 9^2$
$\boxed{D = 25x^2 - 81}$

$E = \left(\frac{9}{4}x - \frac{5}{7}\right)^2$
$E = \left(\frac{9}{4}x\right)^2 - 2 \times \frac{9}{4}x \times \frac{5}{7} + \left(\frac{5}{7}\right)^2$
$E = \frac{81}{16}x^2 - \frac{45 \times \cancel{2}}{14 \times \cancel{2}}x + \frac{25}{49}$
$\boxed{E = \frac{81}{16}x^2 - \frac{45}{14}x + \frac{25}{49}}$

$F = -(10x + 7) \times (10x - 7)$
$F = -\left((10x)^2 - 7^2\right)$
$F = -(100x^2 - 49)$
$\boxed{F = -100x^2 + 49}$