Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

$A = 100\,x^2 + 60\,x + 9$
$A = (10\,x)^2 + 2 \times 10\,x \times 3 + 3^2$
$\boxed{A = (10\,x + 3)^2}$

$B = -81\,x^2 + 16$
$B = \sqrt{16}^2 - \left(\sqrt{81}\,x\right)^2$
$B = \left(\sqrt{16} + \sqrt{81}\,x\right) \times \left(\sqrt{16} - \sqrt{81}\,x\right)$
$B = \left(\sqrt{81}\,x + \sqrt{16}\right) \times (4 - 9\,x)$
$B = \left(\sqrt{81}\,x + \sqrt{16}\right) \times (-9\,x + 4)$
$\boxed{B = (9\,x + 4) \times (-9\,x + 4)}$

$C = (9\,x - 7)^2 - 36\,x^2$
$C = (9\,x - 7)^2 - (6\,x)^2$
$C = (9\,x - 7 + 6\,x) \times (9\,x - 7 - 6\,x)$
$C = (9\,x + 6\,x - 7) \times (9\,x - 6\,x - 7)$
$\boxed{C = (15\,x - 7) \times (3\,x - 7)}$

$D = (2\,x - 8) \times (x + 7) + (3\,x + 1) \times (2\,x - 8)$
$D = (2\,x - 8) \times (x + 7 + 3\,x + 1)$
$D = (2\,x - 8) \times (x + 3\,x + 7 + 1)$
$\boxed{D = (2\,x - 8) \times (4\,x + 8)}$

$E = (x + 1)^2 - (8\,x + 2) \times (x + 1)$
$E = (x + 1) \times (x + 1) - (8\,x + 2) \times (x + 1)$
$E = (x + 1) \times (x + 1 - (8\,x + 2))$
$E = (x + 1) \times (x + 1 - 8\,x - 2)$
$E = (x + 1) \times (x - 8\,x + 1 - 2)$
$\boxed{E = (x + 1) \times (-7\,x - 1)}$

$F = (8\,x - 2) \times (3\,x - 9) + 8\,x - 2$
$F = (8\,x - 2) \times (3\,x - 9) + (8\,x - 2) \times 1$
$F = (8\,x - 2) \times (3\,x - 9 + 1)$
$\boxed{F = (8\,x - 2) \times (3\,x - 8)}$

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

$A = (6\,x + 8) \times (2\,x + 10) - (7\,x + 5) \times (2\,x + 10)$
$A = (2\,x + 10) \times (6\,x + 8 - (7\,x + 5))$
$A = (2\,x + 10) \times (6\,x + 8 - 7\,x - 5)$
$A = (2\,x + 10) \times (6\,x - 7\,x + 8 - 5)$
$\boxed{A = (2\,x + 10) \times (-x + 3)}$

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

$C = -16 + (10\,x + 6)^2$
$C = -4^2 + (10\,x + 6)^2$
$C = (10\,x + 6 + 4) \times (10\,x + 6 - 4)$
$\boxed{C = (10\,x + 10) \times (10\,x + 2)}$

$D = -25\,x^2 + 9$
$D = \sqrt{9}^2 - \left(\sqrt{25}\,x\right)^2$
$D = \left(\sqrt{9} + \sqrt{25}\,x\right) \times \left(\sqrt{9} - \sqrt{25}\,x\right)$
$D = \left(\sqrt{25}\,x + \sqrt{9}\right) \times (3 - 5\,x)$
$D = \left(\sqrt{25}\,x + \sqrt{9}\right) \times (-5\,x + 3)$
$\boxed{D = (5\,x + 3) \times (-5\,x + 3)}$

$E = (2\,x + 6) \times (x + 2) + 2\,x + 6$
$E = (2\,x + 6) \times (x + 2) + (2\,x + 6) \times 1$
$E = (2\,x + 6) \times (x + 2 + 1)$
$\boxed{E = (2\,x + 6) \times (x + 3)}$

$F = (-3\,x + 5) \times (7\,x + 5) + (-3\,x + 5)^2$
$F = (-3\,x + 5) \times (7\,x + 5) + (-3\,x + 5) \times (-3\,x + 5)$
$F = (-3\,x + 5) \times (7\,x + 5 - 3\,x + 5)$
$F = (-3\,x + 5) \times (7\,x - 3\,x + 5 + 5)$
$\boxed{F = (-3\,x + 5) \times (4\,x + 10)}$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

$A = 4\,x^2 - 100$
$A = \left(\sqrt{4}\,x\right)^2 - \sqrt{100}^2$
$A = \left(\sqrt{4}\,x + \sqrt{100}\right) \times \left(\sqrt{4}\,x - \sqrt{100}\right)$
$\boxed{A = (2\,x + 10) \times (2\,x - 10)}$

$B = 1 - (-5\,x + 8)^2$

$B = 1^2 - (-5x+8)^2$
$B = (1-5x+8) \times (1-(-5x+8))$
$B = (-5x+1+8) \times (1+5x-8)$
$B = (-5x+1+8) \times (5x+1-8)$
$\boxed{B = (-5x+9) \times (5x-7)}$

$C = (3x+4) \times (-10x-8) + (7x+4) \times (-10x-8)$
$C = (-10x-8) \times (3x+4+7x+4)$
$C = (-10x-8) \times (3x+7x+4+4)$
$\boxed{C = (-10x-8) \times (10x+8)}$

$D = 25x^2 + 10x + 1$
$D = (5x)^2 + 2 \times 5x \times 1 + 1^2$
$\boxed{D = (5x+1)^2}$

$E = (2x-3) \times (10x+8) - (10x+8)$
$E = (2x-3) \times (10x+8) - (10x+8) \times 1$
$E = (10x+8) \times (2x-3-1)$
$\boxed{E = (10x+8) \times (2x-4)}$

$F = (-2x+5)^2 + (-3x+2) \times (-2x+5)$
$F = (-2x+5) \times (-2x+5) + (-3x+2) \times (-2x+5)$
$F = (-2x+5) \times (-2x+5-3x+2)$
$F = (-2x+5) \times (-2x-3x+5+2)$
$\boxed{F = (-2x+5) \times (-5x+7)}$

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

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

$B = (-8x+9) \times (-x+3) - (-8x+9) \times (3x+2)$
$B = (-8x+9) \times (-x+3-(3x+2))$
$B = (-8x+9) \times (-x+3-3x-2)$
$B = (-8x+9) \times (-x-3x+3-2)$
$\boxed{B = (-8x+9) \times (-4x+1)}$

$C = (-x+2)^2 - 49$
$C = (-x+2)^2 - 7^2$
$C = (-x+2+7) \times (-x+2-7)$
$\boxed{C = (-x+9) \times (-x-5)}$

$D = 49x^2 - 81$
$D = \left(\sqrt{49}x\right)^2 - \sqrt{81}^2$
$D = \left(\sqrt{49}x + \sqrt{81}\right) \times \left(\sqrt{49}x - \sqrt{81}\right)$
$\boxed{D = (7x+9) \times (7x-9)}$

$E = (6x+9) \times (10x-6) + 10x - 6$
$E = (6x+9) \times (10x-6) + (10x-6) \times 1$
$E = (10x-6) \times (6x+9+1)$
$\boxed{E = (10x-6) \times (6x+10)}$

$F = (9x+1)^2 + (-10x+10) \times (9x+1)$
$F = (9x+1) \times (9x+1) + (-10x+10) \times (9x+1)$
$F = (9x+1) \times (9x+1-10x+10)$
$F = (9x+1) \times (9x-10x+1+10)$
$\boxed{F = (9x+1) \times (-x+11)}$

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

$A = -36 + (10x+1)^2$
$A = -6^2 + (10x+1)^2$
$A = (10x+1+6) \times (10x+1-6)$
$\boxed{A = (10x+7) \times (10x-5)}$

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

$C = (6x+9) \times (-10x+4) + (6x+9) \times (-3x+5)$
$C = (6x+9) \times (-10x+4-3x+5)$
$C = (6x+9) \times (-10x-3x+4+5)$
$\boxed{C = (6x+9) \times (-13x+9)}$

$D = x^2 - 81$
$D = x^2 - \sqrt{81}^2$
$D = \left(x + \sqrt{81}\right) \times \left(x - \sqrt{81}\right)$
$\boxed{D = (x+9) \times (x-9)}$

$E = -(4x+2) \times (4x+1) + 4x + 1$
$E = -(4x+2) \times (4x+1) + (4x+1) \times 1$
$E = (4x+1) \times (-(4x+2)+1)$

$E = (4x+1) \times (-4x-2+1)$

$\boxed{E = (4x+1) \times (-4x-1)}$

$F = (-5x+7)^2 + (-5x+8) \times (-5x+7)$

$F = (-5x+7) \times (-5x+7) + (-5x+8) \times (-5x+7)$

$F = (-5x+7) \times (-5x+7-5x+8)$

$F = (-5x+7) \times (-5x-5x+7+8)$

$\boxed{F = (-5x+7) \times (-10x+15)}$

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$A = (2x+9) \times (-9x+7) - (2x+9) \times (3x+10)$

$A = (2x+9) \times (-9x+7-(3x+10))$

$A = (2x+9) \times (-9x+7-3x-10)$

$A = (2x+9) \times (-9x-3x+7-10)$

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

$B = 100x^2 - 9$

$B = \left(\sqrt{100}\,x\right)^2 - \sqrt{9}^2$

$B = \left(\sqrt{100}\,x + \sqrt{9}\right) \times \left(\sqrt{100}\,x - \sqrt{9}\right)$

$\boxed{B = (10x+3) \times (10x-3)}$

$C = -36x^2 + (10x-9)^2$

$C = -(6x)^2 + (10x-9)^2$

$C = (10x-9+6x) \times (10x-9-6x)$

$C = (10x+6x-9) \times (10x-6x-9)$

$\boxed{C = (16x-9) \times (4x-9)}$

$D = 81x^2 - 72x + 16$

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

$\boxed{D = (9x-4)^2}$

$E = (3x+6) \times (3x-3) + 3x - 3$

$E = (3x+6) \times (3x-3) + (3x-3) \times 1$

$E = (3x-3) \times (3x+6+1)$

$\boxed{E = (3x-3) \times (3x+7)}$

$F = (8x+4) \times (2x+2) + (2x+2)^2$

$F = (8x+4) \times (2x+2) + (2x+2) \times (2x+2)$

$F = (2x+2) \times (8x+4+2x+2)$

$F = (2x+2) \times (8x+2x+4+2)$

$\boxed{F = (2x+2) \times (10x+6)}$