Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

$A = -(3x - 8) \times (-x + 9) + (3x + 3) \times (-x + 9)$
$A = (-x + 9) \times (-(3x - 8) + 3x + 3)$
$A = (-x + 9) \times (-3x + 8 + 3x + 3)$
$A = (-x + 9) \times (-3x + 3x + 8 + 3)$
$\boxed{A = (-x + 9) \times 11}$

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

$C = 49x^2 - 1$
$C = \left(\sqrt{49}\,x\right)^2 - \sqrt{1}^2$
$C = \left(\sqrt{49}\,x + \sqrt{1}\right) \times \left(\sqrt{49}\,x - \sqrt{1}\right)$
$\boxed{C = (7x + 1) \times (7x - 1)}$

$D = -(-6x - 9)^2 + 49x^2$

$D = -(-6x - 9)^2 + (7x)^2$
$D = (7x - 6x - 9) \times (7x - (-6x - 9))$
$D = (x - 9) \times (7x + 6x + 9)$
$\boxed{D = (x - 9) \times (13x + 9)}$

$E = (4x + 5)^2 + (7x + 7) \times (4x + 5)$
$E = (4x + 5) \times (4x + 5) + (7x + 7) \times (4x + 5)$
$E = (4x + 5) \times (4x + 5 + 7x + 7)$
$E = (4x + 5) \times (4x + 7x + 5 + 7)$
$\boxed{E = (4x + 5) \times (11x + 12)}$

$F = 9x - 5 + (9x - 5) \times (2x - 2)$
$F = (9x - 5) \times 1 + (9x - 5) \times (2x - 2)$
$F = (9x - 5) \times (1 + 2x - 2)$
$F = (9x - 5) \times (2x + 1 - 2)$
$\boxed{F = (9x - 5) \times (2x - 1)}$

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

$A = -(9x + 3)^2 + 25$
$A = -(9x + 3)^2 + 5^2$
$A = (5 + 9x + 3) \times (5 - (9x + 3))$
$A = (9x + 5 + 3) \times (5 - 9x - 3)$
$A = (9x + 5 + 3) \times (-9x + 5 - 3)$
$\boxed{A = (9x + 8) \times (-9x + 2)}$

$B = (4x - 9) \times (x - 3) + (4x - 9) \times (7x + 4)$
$B = (4x - 9) \times (x - 3 + 7x + 4)$
$B = (4x - 9) \times (x + 7x - 3 + 4)$
$\boxed{B = (4x - 9) \times (8x + 1)}$

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

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

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

$E = 10x - 2 + (3x + 8) \times (10x - 2)$
$E = (10x - 2) \times 1 + (3x + 8) \times (10x - 2)$
$E = (10x - 2) \times (1 + 3x + 8)$
$E = (10x - 2) \times (3x + 1 + 8)$
$\boxed{E = (10x - 2) \times (3x + 9)}$

$F = (3x - 6)^2 - (3x - 6) \times (x - 8)$
$F = (3x - 6) \times (3x - 6) - (3x - 6) \times (x - 8)$
$F = (3x - 6) \times (3x - 6 - (x - 8))$
$F = (3x - 6) \times (3x - 6 - x + 8)$
$F = (3x - 6) \times (3x - x - 6 + 8)$
$\boxed{F = (3x - 6) \times (2x + 2)}$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

$A = -(10\,x - 1)^2 + 36\,x^2$
$A = -(10\,x - 1)^2 + (6\,x)^2$
$A = (6\,x + 10\,x - 1) \times (6\,x - (10\,x - 1))$
$A = (16\,x - 1) \times (6\,x - 10\,x + 1)$
$\boxed{A = (16\,x - 1) \times (-4\,x + 1)}$

$B = 64\,x^2 - 4$
$B = \left(\sqrt{64}\,x\right)^2 - \sqrt{4}^2$
$B = \left(\sqrt{64}\,x + \sqrt{4}\right) \times \left(\sqrt{64}\,x - \sqrt{4}\right)$
$\boxed{B = (8\,x + 2) \times (8\,x - 2)}$

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

$D = 100\,x^2 - 100\,x + 25$
$D = (10\,x)^2 - 2 \times 10\,x \times 5 + 5^2$
$\boxed{D = (10\,x - 5)^2}$

$E = 9\,x + 10 + (9\,x + 10) \times (6\,x + 8)$
$E = (9\,x + 10) \times 1 + (9\,x + 10) \times (6\,x + 8)$
$E = (9\,x + 10) \times (1 + 6\,x + 8)$
$E = (9\,x + 10) \times (6\,x + 1 + 8)$
$\boxed{E = (9\,x + 10) \times (6\,x + 9)}$

$F = (5\,x + 10)^2 + (-7\,x - 2) \times (5\,x + 10)$
$F = (5\,x + 10) \times (5\,x + 10) + (-7\,x - 2) \times (5\,x + 10)$
$F = (5\,x + 10) \times (5\,x + 10 - 7\,x - 2)$
$F = (5\,x + 10) \times (5\,x - 7\,x + 10 - 2)$
$\boxed{F = (5\,x + 10) \times (-2\,x + 8)}$

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

$A = (-x + 7) \times (-10\,x + 1) + (-x + 7) \times (-10\,x - 3)$
$A = (-x + 7) \times (-10\,x + 1 - 10\,x - 3)$
$A = (-x + 7) \times (-10\,x - 10\,x + 1 - 3)$
$\boxed{A = (-x + 7) \times (-20\,x - 2)}$

$B = 100\,x^2 - 100\,x + 25$
$B = (10\,x)^2 - 2 \times 10\,x \times 5 + 5^2$
$\boxed{B = (10\,x - 5)^2}$

$C = -36 + (-5\,x + 4)^2$
$C = -6^2 + (-5\,x + 4)^2$
$C = (-5\,x + 4 + 6) \times (-5\,x + 4 - 6)$
$\boxed{C = (-5\,x + 10) \times (-5\,x - 2)}$

$D = -36\,x^2 + 81$
$D = \sqrt{81}^2 - \left(\sqrt{36}\,x\right)^2$

$D = \left(\sqrt{81} + \sqrt{36}\,x\right) \times \left(\sqrt{81} - \sqrt{36}\,x\right)$
$D = \left(\sqrt{36}\,x + \sqrt{81}\right) \times (9 - 6\,x)$
$D = \left(\sqrt{36}\,x + \sqrt{81}\right) \times (-6\,x + 9)$
$\boxed{D = (6\,x + 9) \times (-6\,x + 9)}$

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

$F = -(3\,x + 4) + (6\,x + 7) \times (3\,x + 4)$
$F = -(3\,x + 4) \times 1 + (6\,x + 7) \times (3\,x + 4)$
$F = (3\,x + 4) \times (-1 + 6\,x + 7)$
$F = (3\,x + 4) \times (6\,x - 1 + 7)$
$\boxed{F = (3\,x + 4) \times (6\,x + 6)}$

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

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

$B = 4 - (3\,x + 4)^2$

$B = 2^2 - (3\,x + 4)^2$
$B = (2 + 3\,x + 4) \times (2 - (3\,x + 4))$
$B = (3\,x + 2 + 4) \times (2 - 3\,x - 4)$
$B = (3\,x + 2 + 4) \times (-3\,x + 2 - 4)$
$\boxed{B = (3\,x + 6) \times (-3\,x - 2)}$

$C = (x + 9) \times (8x + 5) + (8x + 5) \times (x - 10)$
$C = (8x + 5) \times (x + 9 + x - 10)$
$C = (8x + 5) \times (x + x + 9 - 10)$
$\boxed{C = (8x + 5) \times (2x - 1)}$

$D = 16x^2 + 40x + 25$
$D = (4x)^2 + 2 \times 4x \times 5 + 5^2$
$\boxed{D = (4x + 5)^2}$

$E = (4x + 9) \times (8x + 2) + 8x + 2$
$E = (4x + 9) \times (8x + 2) + (8x + 2) \times 1$

$E = (8x + 2) \times (4x + 9 + 1)$
$\boxed{E = (8x + 2) \times (4x + 10)}$

$F = (2x + 4) \times (-5x + 10) - (-5x + 10)^2$
$F = (2x + 4) \times (-5x + 10) - (-5x + 10) \times (-5x + 10)$
$F = (-5x + 10) \times (2x + 4 - (-5x + 10))$
$F = (-5x + 10) \times (2x + 4 + 5x - 10)$
$F = (-5x + 10) \times (2x + 5x + 4 - 10)$
$\boxed{F = (-5x + 10) \times (7x - 6)}$

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$A = 64 - (7x + 8)^2$
$A = 8^2 - (7x + 8)^2$
$A = (8 + 7x + 8) \times (8 - (7x + 8))$
$A = (7x + 8 + 8) \times (8 - 7x - 8)$
$A = (7x + 8 + 8) \times (-7x + 8 - 8)$
$\boxed{A = (7x + 16) \times (-7x)}$

$B = 36x^2 - 108x + 81$
$B = (6x)^2 - 2 \times 6x \times 9 + 9^2$
$\boxed{B = (6x - 9)^2}$

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

$D = (2x - 9) \times (10x + 1) + (-2x - 7) \times (10x + 1)$

$D = (10x + 1) \times (2x - 9 - 2x - 7)$
$D = (10x + 1) \times (2x - 2x - 9 - 7)$
$\boxed{D = (10x + 1) \times (-16)}$

$E = -(5x + 9) + (5x + 9) \times (9x + 4)$
$E = -(5x + 9) \times 1 + (5x + 9) \times (9x + 4)$
$E = (5x + 9) \times (-1 + 9x + 4)$
$E = (5x + 9) \times (9x - 1 + 4)$
$\boxed{E = (5x + 9) \times (9x + 3)}$

$F = (-5x + 5)^2 + (-5x + 5) \times (-10x - 6)$
$F = (-5x + 5) \times (-5x + 5) + (-5x + 5) \times (-10x - 6)$
$F = (-5x + 5) \times (-5x + 5 - 10x - 6)$
$F = (-5x + 5) \times (-5x - 10x + 5 - 6)$
$\boxed{F = (-5x + 5) \times (-15x - 1)}$