Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

$A = (5\,x + 5) \times (7\,x - 4) - (5\,x + 2) \times (5\,x + 5)$
$A = (5\,x + 5) \times (7\,x - 4 - (5\,x + 2))$
$A = (5\,x + 5) \times (7\,x - 4 - 5\,x - 2)$
$A = (5\,x + 5) \times (7\,x - 5\,x - 4 - 2)$
$\boxed{A = (5\,x + 5) \times (2\,x - 6)}$

$B = 9 - (-4\,x + 7)^2$
$B = 3^2 - (-4\,x + 7)^2$
$B = (3 - 4\,x + 7) \times (3 - (-4\,x + 7))$
$B = (-4\,x + 3 + 7) \times (3 + 4\,x - 7)$
$B = (-4\,x + 3 + 7) \times (4\,x + 3 - 7)$
$\boxed{B = (-4\,x + 10) \times (4\,x - 4)}$

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

$D = 9\,x^2 - 1$
$D = \left(\sqrt{9}\,x\right)^2 - \sqrt{1}^2$
$D = \left(\sqrt{9}\,x + \sqrt{1}\right) \times \left(\sqrt{9}\,x - \sqrt{1}\right)$
$\boxed{D = (3\,x + 1) \times (3\,x - 1)}$

$E = (-8\,x - 8) \times (-10\,x + 4) + (-10\,x + 4)^2$
$E = (-8\,x - 8) \times (-10\,x + 4) + (-10\,x + 4) \times (-10\,x + 4)$
$E = (-10\,x + 4) \times (-8\,x - 8 - 10\,x + 4)$
$E = (-10\,x + 4) \times (-8\,x - 10\,x - 8 + 4)$
$\boxed{E = (-10\,x + 4) \times (-18\,x - 4)}$

$F = (10\,x + 7) \times (10\,x + 3) + 10\,x + 3$
$F = (10\,x + 7) \times (10\,x + 3) + (10\,x + 3) \times 1$
$F = (10\,x + 3) \times (10\,x + 7 + 1)$
$\boxed{F = (10\,x + 3) \times (10\,x + 8)}$

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

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

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

$C = -(x - 3)^2 + 49\,x^2$
$C = -(x - 3)^2 + (7\,x)^2$
$C = (7\,x + x - 3) \times (7\,x - (x - 3))$
$C = (8\,x - 3) \times (7\,x - x + 3)$
$\boxed{C = (8\,x - 3) \times (6\,x + 3)}$

$D = (-x + 3) \times (9\,x + 2) + (4\,x + 8) \times (-x + 3)$

$D = (-x + 3) \times (9\,x + 2 + 4\,x + 8)$
$D = (-x + 3) \times (9\,x + 4\,x + 2 + 8)$
$\boxed{D = (-x + 3) \times (13\,x + 10)}$

$E = (10\,x - 7) \times (8\,x + 2) + (8\,x + 2)^2$
$E = (10\,x - 7) \times (8\,x + 2) + (8\,x + 2) \times (8\,x + 2)$
$E = (8\,x + 2) \times (10\,x - 7 + 8\,x + 2)$
$E = (8\,x + 2) \times (10\,x + 8\,x - 7 + 2)$
$\boxed{E = (8\,x + 2) \times (18\,x - 5)}$

$F = -(10\,x - 5) \times (6\,x - 4) + 6\,x - 4$
$F = -(10\,x - 5) \times (6\,x - 4) + (6\,x - 4) \times 1$
$F = (6\,x - 4) \times (-(10\,x - 5) + 1)$
$F = (6\,x - 4) \times (-10\,x + 5 + 1)$
$\boxed{F = (6\,x - 4) \times (-10\,x + 6)}$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

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

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

$B = -4\,x^2 + 81$

$B = \sqrt{81}^2 - \left(\sqrt{4}\,x\right)^2$

$B = \left(\sqrt{81} + \sqrt{4}\,x\right) \times \left(\sqrt{81} - \sqrt{4}\,x\right)$

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

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

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

$C = 100\,x^2 + 20\,x + 1$

$C = (10\,x)^2 + 2 \times 10\,x \times 1 + 1^2$

$\boxed{C = (10\,x + 1)^2}$

$D = -(-5\,x + 6) \times (3\,x + 7) + (2\,x + 1) \times (-5\,x + 6)$

$D = (-5\,x + 6) \times (-(3\,x + 7) + 2\,x + 1)$

$D = (-5\,x + 6) \times (-3\,x - 7 + 2\,x + 1)$

$D = (-5\,x + 6) \times (-3\,x + 2\,x - 7 + 1)$

$\boxed{D = (-5\,x + 6) \times (-x - 6)}$

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

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

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

$\boxed{E = (9\,x + 8) \times (x + 2)}$

$F = (10\,x + 9) \times (8\,x - 7) + (8\,x - 7)^2$

$F = (10\,x + 9) \times (8\,x - 7) + (8\,x - 7) \times (8\,x - 7)$

$F = (8\,x - 7) \times (10\,x + 9 + 8\,x - 7)$

$F = (8\,x - 7) \times (10\,x + 8\,x + 9 - 7)$

$\boxed{F = (8\,x - 7) \times (18\,x + 2)}$

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

$A = -x^2 + 9$

$A = \sqrt{9}^2 - x^2$

$A = \left(\sqrt{9} + x\right) \times \left(\sqrt{9} - x\right)$

$A = \left(x + \sqrt{9}\right) \times (3 - x)$

$A = \left(x + \sqrt{9}\right) \times (-x + 3)$

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

$B = (8\,x + 1) \times (-x - 1) - (-x - 1) \times (9\,x - 9)$

$B = (-x - 1) \times (8\,x + 1 - (9\,x - 9))$

$B = (-x - 1) \times (8\,x + 1 - 9\,x + 9)$

$B = (-x - 1) \times (8\,x - 9\,x + 1 + 9)$

$\boxed{B = (-x - 1) \times (-x + 10)}$

$C = -(2\,x + 6)^2 + 81$

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

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

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

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

$\boxed{C = (2\,x + 15) \times (-2\,x + 3)}$

$D = 4\,x^2 + 36\,x + 81$

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

$\boxed{D = (2\,x + 9)^2}$

$E = (8\,x + 3) \times (2\,x + 7) + (8\,x + 3)^2$

$E = (8\,x + 3) \times (2\,x + 7) + (8\,x + 3) \times (8\,x + 3)$

$E = (8\,x + 3) \times (2\,x + 7 + 8\,x + 3)$

$E = (8\,x + 3) \times (2\,x + 8\,x + 7 + 3)$

$\boxed{E = (8\,x + 3) \times (10\,x + 10)}$

$F = (2\,x + 8) \times (10\,x + 5) + 2\,x + 8$

$F = (2\,x + 8) \times (10\,x + 5) + (2\,x + 8) \times 1$

$F = (2\,x + 8) \times (10\,x + 5 + 1)$

$\boxed{F = (2\,x + 8) \times (10\,x + 6)}$

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

$A = -(5\,x + 3) \times (-8\,x - 1) + (5\,x + 3) \times (-7\,x - 3)$

$A = (5\,x + 3) \times (-(-8\,x - 1) - 7\,x - 3)$

$A = (5\,x + 3) \times (8\,x + 1 - 7\,x - 3)$

$A = (5\,x + 3) \times (8\,x - 7\,x + 1 - 3)$

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

$B = 49\,x^2 + 112\,x + 64$

$B = (7\,x)^2 + 2 \times 7\,x \times 8 + 8^2$

$\boxed{B = (7\,x + 8)^2}$

$C = -9\,x^2 + 36$

$C = \sqrt{36}^2 - \left(\sqrt{9}\,x\right)^2$

$C = \left(\sqrt{36} + \sqrt{9}\,x\right) \times \left(\sqrt{36} - \sqrt{9}\,x\right)$

$C = \left(\sqrt{9}\,x + \sqrt{36}\right) \times (6 - 3\,x)$

$C = \left(\sqrt{9}\,x + \sqrt{36}\right) \times (-3\,x + 6)$

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

$D = -49 + (-5x + 6)^2$
$D = -7^2 + (-5x + 6)^2$
$D = (-5x + 6 + 7) \times (-5x + 6 - 7)$
$$D = (-5x + 13) \times (-5x - 1)$$

$E = (-6x - 10) \times (-3x + 5) + (-6x - 10)^2$
$E = (-6x - 10) \times (-3x + 5) + (-6x - 10) \times (-6x - 10)$

$E = (-6x - 10) \times (-3x + 5 - 6x - 10)$
$E = (-6x - 10) \times (-3x - 6x + 5 - 10)$
$$E = (-6x - 10) \times (-9x - 5)$$

$F = 2x + 6 + (2x + 6) \times (8x - 2)$
$F = (2x + 6) \times 1 + (2x + 6) \times (8x - 2)$
$F = (2x + 6) \times (1 + 8x - 2)$
$F = (2x + 6) \times (8x + 1 - 2)$
$$F = (2x + 6) \times (8x - 1)$$

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$A = (x + 6)^2 - 100$
$A = (x + 6)^2 - 10^2$
$A = (x + 6 + 10) \times (x + 6 - 10)$
$$A = (x + 16) \times (x - 4)$$

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

$C = 49x^2 + 42x + 9$
$C = (7x)^2 + 2 \times 7x \times 3 + 3^2$
$$C = (7x + 3)^2$$

$D = (x + 1) \times (-6x + 7) + (x + 1) \times (-6x + 7)$
$D = (x + 1) \times (-6x + 7 - 6x + 7)$
$D = (x + 1) \times (-6x - 6x + 7 + 7)$
$$D = (x + 1) \times (-12x + 14)$$

$E = -(-8x + 7) \times (-10x - 10) + (-8x + 7)^2$
$E = -(-8x + 7) \times (-10x - 10) + (-8x + 7) \times (-8x + 7)$
$E = (-8x + 7) \times (-(-10x - 10) - 8x + 7)$
$E = (-8x + 7) \times (10x + 10 - 8x + 7)$
$E = (-8x + 7) \times (10x - 8x + 10 + 7)$
$$E = (-8x + 7) \times (2x + 17)$$

$F = (5x - 2) \times (2x + 10) + 5x - 2$
$F = (5x - 2) \times (2x + 10) + (5x - 2) \times 1$
$F = (5x - 2) \times (2x + 10 + 1)$
$$F = (5x - 2) \times (2x + 11)$$