Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

$A = -16\,x^2 + (-5\,x + 8)^2$
$A = -\,(4\,x)^2 + (-5\,x + 8)^2$
$A = (-5\,x + 8 + 4\,x) \times (-5\,x + 8 - 4\,x)$
$A = (-5\,x + 4\,x + 8) \times (-5\,x - 4\,x + 8)$
$\boxed{A = (-x + 8) \times (-9\,x + 8)}$

$B = (7\,x + 10) \times (2\,x + 7) - (7\,x + 10) \times (3\,x - 4)$
$B = (7\,x + 10) \times (2\,x + 7 - (3\,x - 4))$
$B = (7\,x + 10) \times (2\,x + 7 - 3\,x + 4)$
$B = (7\,x + 10) \times (2\,x - 3\,x + 7 + 4)$
$\boxed{B = (7\,x + 10) \times (-x + 11)}$

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

$D = 4\,x^2 - 49$
$D = \left(\sqrt{4}\,x\right)^2 - \sqrt{49}^2$
$D = \left(\sqrt{4}\,x + \sqrt{49}\right) \times \left(\sqrt{4}\,x - \sqrt{49}\right)$
$\boxed{D = (2\,x + 7) \times (2\,x - 7)}$

$E = (8\,x + 1) \times (9\,x + 10) + 8\,x + 1$
$E = (8\,x + 1) \times (9\,x + 10) + (8\,x + 1) \times 1$
$E = (8\,x + 1) \times (9\,x + 10 + 1)$
$\boxed{E = (8\,x + 1) \times (9\,x + 11)}$

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

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

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

$B = 9\,x^2 - 81$
$B = \left(\sqrt{9}\,x\right)^2 - \sqrt{81}^2$
$B = \left(\sqrt{9}\,x + \sqrt{81}\right) \times \left(\sqrt{9}\,x - \sqrt{81}\right)$
$\boxed{B = (3\,x + 9) \times (3\,x - 9)}$

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

$D = -100\,x^2 + (-5\,x + 9)^2$
$D = -\,(10\,x)^2 + (-5\,x + 9)^2$

$D = (-5\,x + 9 + 10\,x) \times (-5\,x + 9 - 10\,x)$
$D = (-5\,x + 10\,x + 9) \times (-5\,x - 10\,x + 9)$
$\boxed{D = (5\,x + 9) \times (-15\,x + 9)}$

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

$F = 7\,x + 2 - (7\,x + 2) \times (7\,x + 9)$
$F = (7\,x + 2) \times 1 - (7\,x + 2) \times (7\,x + 9)$
$F = (7\,x + 2) \times (1 - (7\,x + 9))$
$F = (7\,x + 2) \times (1 - 7\,x - 9)$
$F = (7\,x + 2) \times (-7\,x + 1 - 9)$
$\boxed{F = (7\,x + 2) \times (-7\,x - 8)}$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

$A = -36\,x^2 + 16$
$A = \sqrt{16}^2 - \left(\sqrt{36}\,x\right)^2$
$A = \left(\sqrt{16} + \sqrt{36}\,x\right) \times \left(\sqrt{16} - \sqrt{36}\,x\right)$
$A = \left(\sqrt{36}\,x + \sqrt{16}\right) \times (4 - 6\,x)$

$A = \left(\sqrt{36}\,x + \sqrt{16}\right) \times (-6\,x + 4)$
$\boxed{A = (6\,x + 4) \times (-6\,x + 4)}$

$B = 25\,x^2 + 50\,x + 25$

$B = (5\,x)^2 + 2 \times 5\,x \times 5 + 5^2$

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

$C = (-3\,x - 3) \times (-10\,x + 5) - (9\,x + 3) \times (-10\,x + 5)$

$C = (-10\,x + 5) \times (-3\,x - 3 - (9\,x + 3))$

$C = (-10\,x + 5) \times (-3\,x - 3 - 9\,x - 3)$

$C = (-10\,x + 5) \times (-3\,x - 9\,x - 3 - 3)$

$\boxed{C = (-10\,x + 5) \times (-12\,x - 6)}$

$D = (3\,x - 4)^2 - 25\,x^2$

$D = (3\,x - 4)^2 - (5\,x)^2$

$D = (3\,x - 4 + 5\,x) \times (3\,x - 4 - 5\,x)$

$D = (3\,x + 5\,x - 4) \times (3\,x - 5\,x - 4)$

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

$E = (4\,x - 10) \times (-2\,x + 1) + (-2\,x + 1)^2$

$E = (4\,x - 10) \times (-2\,x + 1) + (-2\,x + 1) \times (-2\,x + 1)$

$E = (-2\,x + 1) \times (4\,x - 10 - 2\,x + 1)$

$E = (-2\,x + 1) \times (4\,x - 2\,x - 10 + 1)$

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

$F = (4\,x + 8) \times (8\,x - 4) + 8\,x - 4$

$F = (4\,x + 8) \times (8\,x - 4) + (8\,x - 4) \times 1$

$F = (8\,x - 4) \times (4\,x + 8 + 1)$

$\boxed{F = (8\,x - 4) \times (4\,x + 9)}$

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

$A = (9\,x + 3) \times (-7\,x + 8) + (-2\,x + 4) \times (-7\,x + 8)$

$A = (-7\,x + 8) \times (9\,x + 3 - 2\,x + 4)$

$A = (-7\,x + 8) \times (9\,x - 2\,x + 3 + 4)$

$\boxed{A = (-7\,x + 8) \times (7\,x + 7)}$

$B = 9\,x^2 + 36\,x + 36$

$B = (3\,x)^2 + 2 \times 3\,x \times 6 + 6^2$

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

$C = 16\,x^2 - (5\,x + 3)^2$

$C = (4\,x)^2 - (5\,x + 3)^2$

$C = (4\,x + 5\,x + 3) \times (4\,x - (5\,x + 3))$

$C = (9\,x + 3) \times (4\,x - 5\,x - 3)$

$\boxed{C = (9\,x + 3) \times (-x - 3)}$

$D = 25\,x^2 - 49$

$D = \left(\sqrt{25}\,x\right)^2 - \sqrt{49}^2$

$D = \left(\sqrt{25}\,x + \sqrt{49}\right) \times \left(\sqrt{25}\,x - \sqrt{49}\right)$

$\boxed{D = (5\,x + 7) \times (5\,x - 7)}$

$E = (3\,x + 7) \times (10\,x + 5) + 3\,x + 7$

$E = (3\,x + 7) \times (10\,x + 5) + (3\,x + 7) \times 1$

$E = (3\,x + 7) \times (10\,x + 5 + 1)$

$\boxed{E = (3\,x + 7) \times (10\,x + 6)}$

$F = -(-6\,x + 7) \times (4\,x + 4) + (4\,x + 4)^2$

$F = -(-6\,x + 7) \times (4\,x + 4) + (4\,x + 4) \times (4\,x + 4)$

$F = (4\,x + 4) \times (-(-6\,x + 7) + 4\,x + 4)$

$F = (4\,x + 4) \times (6\,x - 7 + 4\,x + 4)$

$F = (4\,x + 4) \times (6\,x + 4\,x - 7 + 4)$

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

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

$A = 25\,x^2 + 80\,x + 64$

$A = (5\,x)^2 + 2 \times 5\,x \times 8 + 8^2$

$\boxed{A = (5\,x + 8)^2}$

$B = -64\,x^2 + (-7\,x + 1)^2$

$B = -(8\,x)^2 + (-7\,x + 1)^2$

$B = (-7\,x + 1 + 8\,x) \times (-7\,x + 1 - 8\,x)$

$B = (-7\,x + 8\,x + 1) \times (-7\,x - 8\,x + 1)$

$\boxed{B = (x + 1) \times (-15\,x + 1)}$

$C = 81\,x^2 - 64$

$C = \left(\sqrt{81}\,x\right)^2 - \sqrt{64}^2$

$C = \left(\sqrt{81}\,x + \sqrt{64}\right) \times \left(\sqrt{81}\,x - \sqrt{64}\right)$

$\boxed{C = (9\,x + 8) \times (9\,x - 8)}$

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

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

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

$\boxed{D = (-10\,x - 7) \times (8\,x - 11)}$

$E = (6\,x - 10) \times (9\,x - 8) + (6\,x - 10)^2$

$E = (6\,x - 10) \times (9\,x - 8) + (6\,x - 10) \times (6\,x - 10)$
$E = (6\,x - 10) \times (9\,x - 8 + 6\,x - 10)$
$E = (6\,x - 10) \times (9\,x + 6\,x - 8 - 10)$
$\boxed{E = (6\,x - 10) \times (15\,x - 18)}$

$F = -(8\,x + 7) + (7\,x + 3) \times (8\,x + 7)$

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

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$A = (10\,x + 9) \times (-8\,x + 4) + (5\,x - 2) \times (10\,x + 9)$
$A = (10\,x + 9) \times (-8\,x + 4 + 5\,x - 2)$
$A = (10\,x + 9) \times (-8\,x + 5\,x + 4 - 2)$
$\boxed{A = (10\,x + 9) \times (-3\,x + 2)}$

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

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

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

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

$E = -(3\,x + 1)^2 + (3\,x + 1) \times (6\,x + 9)$
$E = -(3\,x + 1) \times (3\,x + 1) + (3\,x + 1) \times (6\,x + 9)$
$E = (3\,x + 1) \times (-(3\,x + 1) + 6\,x + 9)$
$E = (3\,x + 1) \times (-3\,x - 1 + 6\,x + 9)$
$E = (3\,x + 1) \times (-3\,x + 6\,x - 1 + 9)$
$\boxed{E = (3\,x + 1) \times (3\,x + 8)}$

$F = (3\,x + 8) \times (5\,x + 9) + 3\,x + 8$
$F = (3\,x + 8) \times (5\,x + 9) + (3\,x + 8) \times 1$
$F = (3\,x + 8) \times (5\,x + 9 + 1)$
$\boxed{F = (3\,x + 8) \times (5\,x + 10)}$