Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

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

$B = (5\,x + 8) \times (10\,x + 7) + (10\,x + 7) \times (-7\,x + 5)$
$B = (10\,x + 7) \times (5\,x + 8 - 7\,x + 5)$
$B = (10\,x + 7) \times (5\,x - 7\,x + 8 + 5)$
$\boxed{B = (10\,x + 7) \times (-2\,x + 13)}$

$C = 64\,x^2 - 112\,x + 49$
$C = (8\,x)^2 - 2 \times 8\,x \times 7 + 7^2$
$\boxed{C = (8\,x - 7)^2}$

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

$E = (x + 6) \times (10\,x - 6) + 10\,x - 6$
$E = (x + 6) \times (10\,x - 6) + (10\,x - 6) \times 1$
$E = (10\,x - 6) \times (x + 6 + 1)$
$\boxed{E = (10\,x - 6) \times (x + 7)}$

$F = -(-3\,x + 9) \times (3\,x + 10) + (-3\,x + 9)^2$
$F = -(-3\,x + 9) \times (3\,x + 10) + (-3\,x + 9) \times (-3\,x + 9)$
$F = (-3\,x + 9) \times (-(3\,x + 10) - 3\,x + 9)$
$F = (-3\,x + 9) \times (-3\,x - 10 - 3\,x + 9)$
$F = (-3\,x + 9) \times (-3\,x - 3\,x - 10 + 9)$
$\boxed{F = (-3\,x + 9) \times (-6\,x - 1)}$

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

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

$B = -64\,x^2 + (-3\,x - 3)^2$
$B = -(8\,x)^2 + (-3\,x - 3)^2$
$B = (-3\,x - 3 + 8\,x) \times (-3\,x - 3 - 8\,x)$
$B = (-3\,x + 8\,x - 3) \times (-3\,x - 8\,x - 3)$
$\boxed{B = (5\,x - 3) \times (-11\,x - 3)}$

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

$D = 4\,x^2 - 4$

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

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

$F = (6\,x - 3)^2 - (-9\,x + 8) \times (6\,x - 3)$
$F = (6\,x - 3) \times (6\,x - 3) - (-9\,x + 8) \times (6\,x - 3)$
$F = (6\,x - 3) \times (6\,x - 3 - (-9\,x + 8))$
$F = (6\,x - 3) \times (6\,x - 3 + 9\,x - 8)$
$F = (6\,x - 3) \times (6\,x + 9\,x - 3 - 8)$
$\boxed{F = (6\,x - 3) \times (15\,x - 11)}$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

$A = -(5\,x + 1)^2 + 16$
$A = -(5\,x + 1)^2 + 4^2$
$A = (4 + 5\,x + 1) \times (4 - (5\,x + 1))$
$A = (5\,x + 4 + 1) \times (4 - 5\,x - 1)$

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

$B = (3\,x + 8) \times (9\,x - 9) + (-10\,x + 6) \times (3\,x + 8)$

$B = (3\,x + 8) \times (9\,x - 9 - 10\,x + 6)$
$B = (3\,x + 8) \times (9\,x - 10\,x - 9 + 6)$
$\boxed{B = (3\,x + 8) \times (-x - 3)}$

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

$D = -100\,x^2 + 36$
$D = \sqrt{36}^2 - \left(\sqrt{100}\,x\right)^2$
$D = \left(\sqrt{36} + \sqrt{100}\,x\right) \times \left(\sqrt{36} - \sqrt{100}\,x\right)$
$D = \left(\sqrt{100}\,x + \sqrt{36}\right) \times (6 - 10\,x)$
$D = \left(\sqrt{100}\,x + \sqrt{36}\right) \times (-10\,x + 6)$

$\boxed{D = (10\,x + 6) \times (-10\,x + 6)}$

$E = (5\,x - 3) \times (9\,x - 5) + 9\,x - 5$
$E = (5\,x - 3) \times (9\,x - 5) + (9\,x - 5) \times 1$
$E = (9\,x - 5) \times (5\,x - 3 + 1)$
$\boxed{E = (9\,x - 5) \times (5\,x - 2)}$

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

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

$A = (8\,x - 1)^2 - 25\,x^2$
$A = (8\,x - 1)^2 - (5\,x)^2$
$A = (8\,x - 1 + 5\,x) \times (8\,x - 1 - 5\,x)$
$A = (8\,x + 5\,x - 1) \times (8\,x - 5\,x - 1)$
$\boxed{A = (13\,x - 1) \times (3\,x - 1)}$

$B = 36\,x^2 - 81$
$B = \left(\sqrt{36}\,x\right)^2 - \sqrt{81}^2$
$B = \left(\sqrt{36}\,x + \sqrt{81}\right) \times \left(\sqrt{36}\,x - \sqrt{81}\right)$
$\boxed{B = (6\,x + 9) \times (6\,x - 9)}$

$C = (-10\,x + 1) \times (5\,x + 2) - (7\,x + 8) \times (-10\,x + 1)$
$C = (-10\,x + 1) \times (5\,x + 2 - (7\,x + 8))$
$C = (-10\,x + 1) \times (5\,x + 2 - 7\,x - 8)$
$C = (-10\,x + 1) \times (5\,x - 7\,x + 2 - 8)$
$\boxed{C = (-10\,x + 1) \times (-2\,x - 6)}$

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

$E = 5\,x + 7 + (x - 6) \times (5\,x + 7)$
$E = (5\,x + 7) \times 1 + (x - 6) \times (5\,x + 7)$
$E = (5\,x + 7) \times (1 + x - 6)$
$E = (5\,x + 7) \times (x + 1 - 6)$
$\boxed{E = (5\,x + 7) \times (x - 5)}$

$F = (-10\,x - 4) \times (7\,x + 1) + (-10\,x - 4)^2$
$F = (-10\,x - 4) \times (7\,x + 1) + (-10\,x - 4) \times (-10\,x - 4)$
$F = (-10\,x - 4) \times (7\,x + 1 - 10\,x - 4)$
$F = (-10\,x - 4) \times (7\,x - 10\,x + 1 - 4)$
$\boxed{F = (-10\,x - 4) \times (-3\,x - 3)}$

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

$A = 100 - (-2\,x + 8)^2$
$A = 10^2 - (-2\,x + 8)^2$
$A = (10 - 2\,x + 8) \times (10 - (-2\,x + 8))$
$A = (-2\,x + 10 + 8) \times (10 + 2\,x - 8)$
$A = (-2\,x + 10 + 8) \times (2\,x + 10 - 8)$
$\boxed{A = (-2\,x + 18) \times (2\,x + 2)}$

$B = 25\,x^2 - 20\,x + 4$
$B = (5\,x)^2 - 2 \times 5\,x \times 2 + 2^2$

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

$C = -100\,x^2 + 36$
$C = \sqrt{36}^2 - \left(\sqrt{100}\,x\right)^2$
$C = \left(\sqrt{36} + \sqrt{100}\,x\right) \times \left(\sqrt{36} - \sqrt{100}\,x\right)$
$C = \left(\sqrt{100}\,x + \sqrt{36}\right) \times (6 - 10\,x)$
$C = \left(\sqrt{100}\,x + \sqrt{36}\right) \times (-10\,x + 6)$

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

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

$E = (6\,x - 5) \times (6\,x - 7) + (6\,x - 5)^2$
$E = (6\,x - 5) \times (6\,x - 7) + (6\,x - 5) \times (6\,x - 5)$
$E = (6\,x - 5) \times (6\,x - 7 + 6\,x - 5)$

$E = (6\,x - 5) \times (6\,x + 6\,x - 7 - 5)$
$\boxed{E = (6\,x - 5) \times (12\,x - 12)}$

$F = -(3\,x + 1) \times (5\,x + 8) + 3\,x + 1$
$F = -(3\,x + 1) \times (5\,x + 8) + (3\,x + 1) \times 1$
$F = (3\,x + 1) \times (-(5\,x + 8) + 1)$
$F = (3\,x + 1) \times (-5\,x - 8 + 1)$
$\boxed{F = (3\,x + 1) \times (-5\,x - 7)}$

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$A = (-x + 4) \times (9\,x + 9) + (-x + 4) \times (-3\,x + 2)$
$A = (-x + 4) \times (9\,x + 9 - 3\,x + 2)$
$A = (-x + 4) \times (9\,x - 3\,x + 9 + 2)$
$\boxed{A = (-x + 4) \times (6\,x + 11)}$

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

$C = -9\,x^2 + 49$
$C = \sqrt{49}^2 - \left(\sqrt{9}\,x\right)^2$
$C = \left(\sqrt{49} + \sqrt{9}\,x\right) \times \left(\sqrt{49} - \sqrt{9}\,x\right)$
$C = \left(\sqrt{9}\,x + \sqrt{49}\right) \times (7 - 3\,x)$
$C = \left(\sqrt{9}\,x + \sqrt{49}\right) \times (-3\,x + 7)$
$\boxed{C = (3\,x + 7) \times (-3\,x + 7)}$

$D = 100\,x^2 + 40\,x + 4$
$D = (10\,x)^2 + 2 \times 10\,x \times 2 + 2^2$
$\boxed{D = (10\,x + 2)^2}$

$E = -(-8\,x - 10)^2 + (-7\,x + 10) \times (-8\,x - 10)$
$E = -(-8\,x - 10) \times (-8\,x - 10) + (-7\,x + 10) \times (-8\,x - 10)$
$E = (-8\,x - 10) \times (-(-8\,x - 10) - 7\,x + 10)$
$E = (-8\,x - 10) \times (8\,x + 10 - 7\,x + 10)$
$E = (-8\,x - 10) \times (8\,x - 7\,x + 10 + 10)$
$\boxed{E = (-8\,x - 10) \times (x + 20)}$

$F = 4\,x + 1 + (7\,x + 4) \times (4\,x + 1)$
$F = (4\,x + 1) \times 1 + (7\,x + 4) \times (4\,x + 1)$
$F = (4\,x + 1) \times (1 + 7\,x + 4)$
$F = (4\,x + 1) \times (7\,x + 1 + 4)$
$\boxed{F = (4\,x + 1) \times (7\,x + 5)}$