

Corrigé de l'exercice 1

Factoriser chacune des expressions littérales suivantes :

$$A = 49x^2 + 140x + 100$$

$$A = (7x)^2 + 2 \times 7x \times 10 + 10^2$$

$$A = (7x + 10)^2$$

$$B = 4x^2 - (-4x + 7)^2$$

$$B = (2x)^2 - (-4x + 7)^2$$

$$B = (2x - 4x + 7) \times (2x - (-4x + 7))$$

$$B = (-2x + 7) \times (2x + 4x - 7)$$

$$B = (-2x + 7) \times (6x - 7)$$

$$C = (-2x + 4) \times (3x + 7) + (-2x + 4) \times (-x + 6)$$

$$C = (-2x + 4) \times (3x + 7 - x + 6)$$

$$C = (-2x + 4) \times (3x - x + 7 + 6)$$

$$C = (-2x + 4) \times (2x + 13)$$

$$D = -100x^2 + 81$$

$$D = \sqrt{81}^2 - (\sqrt{100}x)^2$$

$$D = (\sqrt{81} + \sqrt{100}x) \times (\sqrt{81} - \sqrt{100}x)$$

$$D = (\sqrt{100}x + \sqrt{81}) \times (9 - 10x)$$

$$D = (\sqrt{100}x + \sqrt{81}) \times (-10x + 9)$$

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

$$E = (7x + 3) \times (4x + 6) - (4x + 6)^2$$

$$E = (7x + 3) \times (4x + 6) - (4x + 6) \times (4x + 6)$$

$$E = (4x + 6) \times (7x + 3 - (4x + 6))$$

$$E = (4x + 6) \times (7x + 3 - 4x - 6)$$

$$E = (4x + 6) \times (7x - 4x + 3 - 6)$$

$$E = (4x + 6) \times (3x - 3)$$

$$F = (x + 7) \times (7x + 7) + x + 7$$

$$F = (x + 7) \times (7x + 7) + (x + 7) \times 1$$

$$F = (x + 7) \times (7x + 7 + 1)$$

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

Corrigé de l'exercice 2

Factoriser chacune des expressions littérales suivantes :

$$A = -(2x - 4) \times (3x - 2) + (10x + 3) \times (3x - 2)$$

$$A = (3x - 2) \times (-(2x - 4) + 10x + 3)$$

$$A = (3x - 2) \times (-2x + 4 + 10x + 3)$$

$$A = (3x - 2) \times (-2x + 10x + 4 + 3)$$

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

$$B = 9x^2 - 24x + 16$$

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

$$B = (3x - 4)^2$$

$$C = 36x^2 - (3x + 1)^2$$

$$C = (6x)^2 - (3x + 1)^2$$

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

$$C = (9x + 1) \times (6x - 3x - 1)$$

$$C = (9x + 1) \times (3x - 1)$$

$$D = 9x^2 - 49$$

$$D = (\sqrt{9}x)^2 - \sqrt{49}^2$$

$$D = (\sqrt{9}x + \sqrt{49}) \times (\sqrt{9}x - \sqrt{49})$$

$$D = (3x + 7) \times (3x - 7)$$

$$E = 7x + 7 + (7x + 7) \times (6x + 5)$$

$$E = (7x + 7) \times 1 + (7x + 7) \times (6x + 5)$$

$$E = (7x + 7) \times (1 + 6x + 5)$$

$$E = (7x + 7) \times (6x + 1 + 5)$$

$$E = (7x + 7) \times (6x + 6)$$

$$F = (8x + 6) \times (5x + 6) + (5x + 6)^2$$

$$F = (8x + 6) \times (5x + 6) + (5x + 6) \times (5x + 6)$$

$$F = (5x + 6) \times (8x + 6 + 5x + 6)$$

$$F = (5x + 6) \times (8x + 5x + 6 + 6)$$

$$F = (5x + 6) \times (13x + 12)$$

Corrigé de l'exercice 3

Factoriser chacune des expressions littérales suivantes :

$$A = 25x^2 - 64$$

$$A = (\sqrt{25}x)^2 - \sqrt{64}^2$$

$$A = (\sqrt{25}x + \sqrt{64}) \times (\sqrt{25}x - \sqrt{64})$$

$$A = (5x + 8) \times (5x - 8)$$

$$B = 36 - (-x - 7)^2$$

$$B = 6^2 - (-x - 7)^2$$

$$B = (6 - x - 7) \times (6 - (-x - 7))$$

$$B = (-x + 6 - 7) \times (6 + x + 7)$$

$$B = (-x + 6 - 7) \times (x + 6 + 7)$$

$$B = (-x - 1) \times (x + 13)$$

$$C = (5x - 4) \times (x + 2) + (x + 2) \times (4x + 4)$$

$$C = (x + 2) \times (5x - 4 + 4x + 4)$$

$$C = (x + 2) \times (5x + 4x - 4 + 4)$$

$$C = (x + 2) \times 9x$$

$$D = 25x^2 + 40x + 16$$

$$D = (5x)^2 + 2 \times 5x \times 4 + 4^2$$

$$D = (5x + 4)^2$$

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

$$E = (x + 10) \times 1 + (10x - 9) \times (x + 10)$$

$$E = (x + 10) \times (1 + 10x - 9)$$

$$E = (x + 10) \times (10x + 1 - 9)$$

$$E = (x + 10) \times (10x - 8)$$

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

$$F = -(6x + 5) \times (6x + 5) + (-7x + 4) \times (6x + 5)$$

$$F = (6x + 5) \times (-6x + 5) - 7x + 4$$

$$F = (6x + 5) \times (-6x - 5 - 7x + 4)$$

$$F = (6x + 5) \times (-6x - 7x - 5 + 4)$$

$$F = (6x + 5) \times (-13x - 1)$$

Corrigé de l'exercice 4

Factoriser chacune des expressions littérales suivantes :

$$A = (-4x + 9)^2 - 25x^2$$

$$A = (-4x + 9)^2 - (5x)^2$$

$$A = (-4x + 9 + 5x) \times (-4x + 9 - 5x)$$

$$A = (-4x + 5x + 9) \times (-4x - 5x + 9)$$

$$A = (x + 9) \times (-9x + 9)$$

$$B = (-7x - 1) \times (6x - 1) + (-7x - 1) \times (7x - 1)$$

$$B = (-7x - 1) \times (6x - 1 + 7x - 1)$$

$$B = (-7x - 1) \times (6x + 7x - 1 - 1)$$

$$B = (-7x - 1) \times (13x - 2)$$

$$C = 100x^2 - 81$$

$$C = (\sqrt{100}x)^2 - \sqrt{81}^2$$

$$C = (\sqrt{100}x + \sqrt{81}) \times (\sqrt{100}x - \sqrt{81})$$

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

$$D = 9x^2 - 54x + 81$$

$$D = (3x)^2 - 2 \times 3x \times 9 + 9^2$$

$$D = (3x - 9)^2$$

$$E = (5x + 1) \times (4x + 9) + 5x + 1$$

$$E = (5x + 1) \times (4x + 9) + (5x + 1) \times 1$$

$$E = (5x + 1) \times (4x + 9 + 1)$$

$$E = (5x + 1) \times (4x + 10)$$

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

$$F = (7x + 7) \times (-3x + 5) - (7x + 7) \times (7x + 7)$$

$$F = (7x + 7) \times (-3x + 5 - (7x + 7))$$

$$F = (7x + 7) \times (-3x + 5 - 7x - 7)$$

$$F = (7x + 7) \times (-3x - 7x + 5 - 7)$$

$$F = (7x + 7) \times (-10x - 2)$$

Corrigé de l'exercice 5

Factoriser chacune des expressions littérales suivantes :

$$A = -4x^2 + 9$$

$$A = \sqrt{9}^2 - (\sqrt{4}x)^2$$

$$A = (\sqrt{9} + \sqrt{4}x) \times (\sqrt{9} - \sqrt{4}x)$$

$$A = (\sqrt{4}x + \sqrt{9}) \times (3 - 2x)$$

$$A = (\sqrt{4}x + \sqrt{9}) \times (-2x + 3)$$

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

$$B = 64x^2 - 112x + 49$$

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

$$B = (8x - 7)^2$$

$$C = (-2x + 1) \times (9x + 5) - (9x + 5) \times (5x + 4)$$

$$C = (9x + 5) \times (-2x + 1 - (5x + 4))$$

$$C = (9x + 5) \times (-2x + 1 - 5x - 4)$$

$$C = (9x + 5) \times (-2x - 5x + 1 - 4)$$

$$C = (9x + 5) \times (-7x - 3)$$

$$D = -4x^2 + (3x - 9)^2$$

$$D = -(2x)^2 + (3x - 9)^2$$

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

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

$$D = (5x - 9) \times (x - 9)$$

$$E = (-5x + 1)^2 + (3x + 9) \times (-5x + 1)$$

$$E = (-5x + 1) \times (-5x + 1) + (3x + 9) \times (-5x + 1)$$

$$E = (-5x + 1) \times (-5x + 1 + 3x + 9)$$

$$E = (-5x + 1) \times (-5x + 3x + 1 + 9)$$

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

$$F = (x + 6) \times (10x - 6) + 10x - 6$$

$$F = (x + 6) \times (10x - 6) + (10x - 6) \times 1$$

$$F = (10x - 6) \times (x + 6 + 1)$$

$$F = (10x - 6) \times (x + 7)$$

Corrigé de l'exercice 6

Factoriser chacune des expressions littérales suivantes :

$$A = (x + 5) \times (-5x + 7) + (9x + 9) \times (x + 5)$$

$$A = (x + 5) \times (-5x + 7 + 9x + 9)$$

$$A = (x + 5) \times (-5x + 9x + 7 + 9)$$

$$A = (x + 5) \times (4x + 16)$$

$$B = (-10x + 9)^2 - 81x^2$$

$$B = (-10x + 9)^2 - (9x)^2$$

$$B = (-10x + 9 + 9x) \times (-10x + 9 - 9x)$$

$$B = (-10x + 9x + 9) \times (-10x - 9x + 9)$$

$$B = (-x + 9) \times (-19x + 9)$$

$$C = 16x^2 + 40x + 25$$

$$C = (4x)^2 + 2 \times 4x \times 5 + 5^2$$

$$C = (4x + 5)^2$$

$$D = -4x^2 + 36$$

$$D = \sqrt{36}^2 - (\sqrt{4}x)^2$$

$$D = (\sqrt{36} + \sqrt{4}x) \times (\sqrt{36} - \sqrt{4}x)$$

$$D = (\sqrt{4}x + \sqrt{36}) \times (6 - 2x)$$

$$D = (\sqrt{4}x + \sqrt{36}) \times (-2x + 6)$$

$$D = (2x + 6) \times (-2x + 6)$$

$$E = -(-9x + 6) \times (-7x + 6) + (-7x + 6)^2$$

$$E = -(-9x + 6) \times (-7x + 6) + (-7x + 6) \times (-7x + 6)$$

$$E = (-7x + 6) \times (-(-9x + 6) - 7x + 6)$$

$$E = (-7x + 6) \times (9x - 6 - 7x + 6)$$

$$E = (-7x + 6) \times (9x - 7x - 6 + 6)$$

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

$$F = (8x - 9) \times (7x + 5) + 7x + 5$$

$$F = (8x - 9) \times (7x + 5) + (7x + 5) \times 1$$

$$F = (7x + 5) \times (8x - 9 + 1)$$

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