

Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

$$A = (4x - 2)^2$$

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

$$A = 16x^2 - 16x + 4$$

$$B = (6x + 5)^2$$

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

$$B = 36x^2 + 60x + 25$$

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

$$C = (9x)^2 - 5^2$$

$$C = 81x^2 - 25$$

$$D = (5x + 6) \times (6x - 5)$$

$$D = 5x \times 6x + 5x \times (-5) + 6 \times 6x + 6 \times (-5)$$

$$D = 30x^2 - 25x + 36x - 30$$

$$D = 30x^2 + (-25 + 36)x - 30$$

$$D = 30x^2 + 11x - 30$$

$$E = \left(\frac{4}{3}x - 10\right) \times \left(10x + \frac{4}{3}\right)$$

$$E = \frac{4}{3}x \times 10x + \frac{4}{3}x \times \frac{4}{3} + -10 \times 10x + -10 \times \frac{4}{3}$$

$$E = \frac{40}{3}x^2 + \frac{16}{9}x + -100x + -\frac{40}{3}$$

$$E = \frac{40}{3}x^2 + \left(\frac{16}{9} - 100\right)x - \frac{40}{3}$$

$$E = \frac{40}{3}x^2 + \left(\frac{16}{9} - \frac{100 \times 9}{1 \times 9}\right)x - \frac{40}{3}$$

$$E = \frac{40}{3}x^2 + \left(\frac{16}{9} - \frac{900}{9}\right)x - \frac{40}{3}$$

$$E = \frac{40}{3}x^2 - \frac{884}{9}x - \frac{40}{3}$$

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

$$F = -((5x)^2 - 4^2)$$

$$F = -(25x^2 - 16)$$

$$F = -25x^2 + 16$$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

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

$$A = 4x \times 2x + 4x \times 4 - 2 \times 2x - 2 \times 4$$

$$A = 8x^2 + 16x - 4x - 8$$

$$A = 8x^2 + (16 - 4)x - 8$$

$$A = 8x^2 + 12x - 8$$

$$B = (3x - 6)^2$$

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

$$B = 9x^2 - 36x + 36$$

$$C = (3x + 9)^2$$

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

$$C = 9x^2 + 54x + 81$$

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

$$D = (9x)^2 - 1^2$$

$$D = 81x^2 - 1$$

$$E = \left(\frac{1}{7}x + 10\right)^2$$

$$E = \left(\frac{1}{7}x\right)^2 + 2 \times \frac{1}{7}x \times 10 + 10^2$$

$$E = \frac{1}{49}x^2 + \frac{20}{7}x + 100$$

$$F = -(9x + 6) \times (6x - 9)$$

$$F = -(9x \times 6x + 9x \times (-9) + 6 \times 6x + 6 \times (-9))$$

$$F = -(54x^2 - 81x + 36x - 54)$$

$$F = -(54x^2 + (-81 + 36)x - 54)$$

$$F = -(54x^2 - 45x - 54)$$

$$F = -54x^2 + 45x + 54$$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

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

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

$$A = 18x^2 - 9x + 36x - 18$$

$$A = 18x^2 + (-9 + 36)x - 18$$

$$A = 18x^2 + 27x - 18$$

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

$$B = x^2 - 2 \times x \times 8 + 8^2$$

$$B = x^2 - 16x + 64$$

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

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

$$C = 9x^2 - 16$$

$$D = (8x + 3)^2$$

$$D = (8x)^2 + 2 \times 8x \times 3 + 3^2$$

$$D = 64x^2 + 48x + 9$$

$$E = -(3x + 8) \times (3x - 8)$$

$$E = -((3x)^2 - 8^2)$$

$$E = -(9x^2 - 64)$$

$$E = -9x^2 + 64$$

$$F = \left(\frac{9}{10}x - \frac{5}{8}\right)^2$$

$$F = \left(\frac{9}{10}x\right)^2 - 2 \times \frac{9}{10}x \times \frac{5}{8} + \left(\frac{5}{8}\right)^2$$

$$F = \frac{81}{100}x^2 - \frac{9 \times 10}{8 \times 10}x + \frac{25}{64}$$

$$F = \frac{81}{100}x^2 - \frac{9}{8}x + \frac{25}{64}$$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

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

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

$$A = 25x^2 - 40x + 16$$

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

$$B = 7x \times 3x + 7x \times 7 - 3 \times 3x - 3 \times 7$$

$$B = 21x^2 + 49x - 9x - 21$$

$$B = 21x^2 + (49 - 9)x - 21$$

$$B = 21x^2 + 40x - 21$$

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

$$C = x^2 - 2^2$$

$$C = x^2 - 4$$

$$D = (x + 7)^2$$

$$D = x^2 + 2 \times x \times 7 + 7^2$$

$$D = x^2 + 14x + 49$$

$$E = -(2x - 5)^2$$

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

$$E = -(4x^2 - 20x + 25)$$

$$E = -4x^2 + 20x - 25$$

$$F = \left(\frac{9}{7}x + \frac{1}{9}\right) \times \left(\frac{9}{7}x - \frac{1}{9}\right)$$

$$F = \left(\frac{9}{7}x\right)^2 - \left(\frac{1}{9}\right)^2$$

$$F = \frac{81}{49}x^2 - \frac{1}{81}$$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

$$A = (5x - 10)^2$$

$$A = (5x)^2 - 2 \times 5x \times 10 + 10^2$$

$$A = 25x^2 - 100x + 100$$

$$B = (10x - 3) \times (10x + 3)$$

$$B = (10x)^2 - 3^2$$

$$B = 100x^2 - 9$$

$$C = (2x + 3)^2$$

$$C = (2x)^2 + 2 \times 2x \times 3 + 3^2$$

$$C = 4x^2 + 12x + 9$$

$$D = (3x - 8) \times (8x + 3)$$

$$D = 3x \times 8x + 3x \times 3 - 8 \times 8x - 8 \times 3$$

$$D = 24x^2 + 9x - 64x - 24$$

$$D = 24x^2 + (9 - 64)x - 24$$

$$D = 24x^2 - 55x - 24$$

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

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

$$E = -(49x^2 + 56x + 16)$$

$$E = -49x^2 - 56x - 16$$

$$F = \left(\frac{2}{7}x + \frac{8}{9}\right) \times \left(\frac{2}{7}x - \frac{8}{9}\right)$$

$$F = \left(\frac{2}{7}x\right)^2 - \left(\frac{8}{9}\right)^2$$

$$F = \frac{4}{49}x^2 - \frac{64}{81}$$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

$$A = (6x - 9) \times (9x + 6)$$

$$A = 6x \times 9x + 6x \times 6 - 9 \times 9x - 9 \times 6$$

$$A = 54x^2 + 36x - 81x - 54$$

$$A = 54x^2 + (36 - 81)x - 54$$

$$A = 54x^2 - 45x - 54$$

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

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

$$B = 64x^2 - 128x + 64$$

$$C = (2x + 8) \times (2x - 8)$$

$$C = (2x)^2 - 8^2$$

$$C = 4x^2 - 64$$

$$D = (3x + 7)^2$$

$$D = (3x)^2 + 2 \times 3x \times 7 + 7^2$$

$$D = 9x^2 + 42x + 49$$

$$E = -(10x + 10)^2$$

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

$$E = -(100x^2 + 200x + 100)$$

$$E = -100x^2 - 200x - 100$$

$$F = \left(\frac{3}{4}x - 6\right)^2$$

$$F = \left(\frac{3}{4}x\right)^2 - 2 \times \frac{3}{4}x \times 6 + 6^2$$

$$F = \frac{9}{16}x^2 - \frac{9 \times 4}{1 \times 4}x + 36$$

$$F = \frac{9}{16}x^2 - 9x + 36$$