

Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

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

$$A = x^2 - 7^2$$

$$A = x^2 - 49$$

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

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

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

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

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

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

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

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

$$D = (6x - 4)^2$$

$$D = (6x)^2 - 2 \times 6x \times 4 + 4^2$$

$$D = 36x^2 - 48x + 16$$

$$E = -(4x - 8)^2$$

$$E = -((4x)^2 - 2 \times 4x \times 8 + 8^2)$$

$$E = -(16x^2 - 64x + 64)$$

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

$$F = \left(\frac{3}{2}x - 1\right) \times \left(x + \frac{3}{2}\right)$$

$$F = \left(\frac{3}{2}x - 1\right) \times \left(x + \frac{3}{2}\right)$$

$$F = \frac{3}{2}x \times x + \frac{3}{2}x \times \frac{3}{2} + -1 \times x + -1 \times \frac{3}{2}$$

$$F = \frac{3}{2}x^2 + \frac{9}{4}x + -x + -\frac{3}{2}$$

$$F = \frac{3}{2}x^2 + \left(\frac{9}{4} - 1\right)x - \frac{3}{2}$$

$$F = \frac{3}{2}x^2 + \left(\frac{9}{4} - \frac{1 \times 4}{1 \times 4}\right)x - \frac{3}{2}$$

$$F = \frac{3}{2}x^2 + \left(\frac{9}{4} - \frac{4}{4}\right)x - \frac{3}{2}$$

$$F = \frac{3}{2}x^2 + \frac{5}{4}x - \frac{3}{2}$$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

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

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

$$A = 25x^2 - 90x + 81$$

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

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

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

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

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

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

$$C = (7x)^2 - 2^2$$

$$C = 49x^2 - 4$$

$$D = (7x + 6)^2$$

$$D = (7x)^2 + 2 \times 7x \times 6 + 6^2$$

$$D = 49x^2 + 84x + 36$$

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

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

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

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

$$F = \left(\frac{10}{3}x - \frac{3}{8}\right)^2$$

$$F = \left(\frac{10}{3}x\right)^2 - 2 \times \frac{10}{3}x \times \frac{3}{8} + \left(\frac{3}{8}\right)^2$$

$$F = \frac{100}{9}x^2 - \frac{5 \times \cancel{12}}{2 \times \cancel{12}}x + \frac{9}{64}$$

$$F = \frac{100}{9}x^2 - \frac{5}{2}x + \frac{9}{64}$$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

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

$$A = 7x \times 8x + 7x \times 7 - 8 \times 8x - 8 \times 7$$

$$A = 56x^2 + 49x - 64x - 56$$

$$A = 56x^2 + (49 - 64)x - 56$$

$$A = 56x^2 - 15x - 56$$

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

$$B = (10x)^2 - 1^2$$

$$B = 100x^2 - 1$$

$$C = (10x + 9)^2$$

$$C = (10x)^2 + 2 \times 10x \times 9 + 9^2$$

$$C = 100x^2 + 180x + 81$$

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

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

$$D = 49x^2 - 28x + 4$$

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

$$E = -((10x)^2 - 9^2)$$

$$E = -(100x^2 - 81)$$

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

$$F = \left(\frac{10}{3}x + \frac{1}{9}\right)^2$$

$$F = \left(\frac{10}{3}x\right)^2 + 2 \times \frac{10}{3}x \times \frac{1}{9} + \left(\frac{1}{9}\right)^2$$

$$F = \frac{100}{9}x^2 + \frac{20}{27}x + \frac{1}{81}$$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

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

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

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

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

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

$$B = 49x^2 - 56x + 16$$

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

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

$$C = 28x^2 - 49x + 16x - 28$$

$$C = 28x^2 + (-49 + 16)x - 28$$

$$C = 28x^2 - 33x - 28$$

$$D = (8x + 9) \times (8x - 9)$$

$$D = (8x)^2 - 9^2$$

$$D = 64x^2 - 81$$

$$E = -(4x - 8)^2$$

$$E = -((4x)^2 - 2 \times 4x \times 8 + 8^2)$$

$$E = -(16x^2 - 64x + 64)$$

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

$$F = \left(\frac{9}{10}x + \frac{8}{7}\right)^2$$

$$F = \left(\frac{9}{10}x\right)^2 + 2 \times \frac{9}{10}x \times \frac{8}{7} + \left(\frac{8}{7}\right)^2$$

$$F = \frac{81}{100}x^2 + \frac{72 \times 2}{35 \times 2}x + \frac{64}{49}$$

$$F = \frac{81}{100}x^2 + \frac{72}{35}x + \frac{64}{49}$$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

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

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

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

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

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

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

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

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

$$C = (2x + 10)^2$$

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

$$C = 4x^2 + 40x + 100$$

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

$$D = (3x)^2 - 5^2$$

$$D = 9x^2 - 25$$

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

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

$$E = -(10x^2 - 4x + 25x - 10)$$

$$E = -(10x^2 + (-4 + 25)x - 10)$$

$$E = -(10x^2 + 21x - 10)$$

$$E = -10x^2 - 21x + 10$$

$$F = \left(\frac{9}{10}x + \frac{6}{5}\right) \times \left(\frac{9}{10}x - \frac{6}{5}\right)$$

$$F = \left(\frac{9}{10}x\right)^2 - \left(\frac{6}{5}\right)^2$$

$$F = \frac{81}{100}x^2 - \frac{36}{25}$$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

$$A = (x - 8) \times (8x + 1)$$

$$A = x \times 8x + x \times 1 - 8 \times 8x - 8 \times 1$$

$$A = 8x^2 + x - 64x - 8$$

$$A = 8x^2 + (1 - 64)x - 8$$

$$A = 8x^2 - 63x - 8$$

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

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

$$B = 49x^2 - 36$$

$$C = (5x - 1)^2$$

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

$$C = 25x^2 - 10x + 1$$

$$D = (x + 1)^2$$

$$D = x^2 + 2 \times x \times 1 + 1^2$$

$$D = x^2 + 2x + 1$$

$$E = \left(\frac{5}{8}x - \frac{6}{5}\right) \times \left(\frac{5}{8}x + \frac{6}{5}\right)$$

$$E = \left(\frac{5}{8}x\right)^2 - \left(\frac{6}{5}\right)^2$$

$$E = \frac{25}{64}x^2 - \frac{36}{25}$$

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

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

$$F = -(45x^2 - 81x + 25x - 45)$$

$$F = -(45x^2 + (-81 + 25)x - 45)$$

$$F = -(45x^2 - 56x - 45)$$

$$F = -45x^2 + 56x + 45$$