

Exercice 1

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (9x + 3)^2 \\ B = (4x - 8)^2 \\ C = (7x - 2) \times (2x + 7) \end{array} \right| \begin{array}{l} D = (3x + 4) \times (3x - 4) \\ E = -(3x - 6)^2 \\ F = \left(\frac{3}{8}x + \frac{9}{7}\right)^2 \end{array}$$

Exercice 2

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (6x - 5)^2 \\ B = (5x + 2)^2 \\ C = (10x + 2) \times (2x - 10) \end{array} \right| \begin{array}{l} D = (8x + 1) \times (8x - 1) \\ E = \left(\frac{4}{5}x - \frac{3}{2}\right)^2 \\ F = -(8x - 5) \times (8x + 5) \end{array}$$

Exercice 3

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (4x - 9) \times (9x + 4) \\ B = (4x + 4) \times (4x - 4) \\ C = (2x + 6)^2 \end{array} \right| \begin{array}{l} D = (7x - 7)^2 \\ E = \left(\frac{5}{6}x - \frac{9}{7}\right) \times \left(\frac{5}{6}x + \frac{9}{7}\right) \\ F = -(7x - 7)^2 \end{array}$$

Exercice 4

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (8x + 9)^2 \\ B = (2x - 9) \times (9x + 2) \\ C = (7x + 9) \times (7x - 9) \end{array} \right| \begin{array}{l} D = (x - 8)^2 \\ E = \left(\frac{2}{3}x - 4\right) \times \left(\frac{2}{3}x + 4\right) \\ F = -(2x + 4) \times (4x - 2) \end{array}$$

Exercice 5

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (5x - 7) \times (7x + 5) \\ B = (x + 10)^2 \\ C = (10x - 4)^2 \\ D = (4x + 2) \times (4x - 2) \end{array} \right| \begin{array}{l} E = \left(\frac{1}{2}x - \frac{2}{5}\right)^2 \\ F = -(8x + 4)^2 \end{array}$$

Exercice 6

Développer chacune des expressions littérales suivantes :

$$\left. \begin{array}{l} A = (10x - 3)^2 \\ B = (6x - 6) \times (6x + 6) \\ C = (6x + 9)^2 \end{array} \right| \begin{array}{l} D = (5x + 4) \times (4x - 5) \\ E = \left(5x + \frac{9}{5}\right)^2 \\ F = -(3x + 7) \times (7x - 3) \end{array}$$

Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

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

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

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

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

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

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

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

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

$$C = 14x^2 + 49x - 4x - 14$$

$$C = 14x^2 + (49 - 4)x - 14$$

$$C = 14x^2 + 45x - 14$$

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

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

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

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

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

$$E = -(9x^2 - 36x + 36)$$

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

$$F = \left(\frac{3}{8}x + \frac{9}{7}\right)^2$$

$$F = \left(\frac{3}{8}x\right)^2 + 2 \times \frac{3}{8}x \times \frac{9}{7} + \left(\frac{9}{7}\right)^2$$

$$F = \frac{9}{64}x^2 + \frac{27 \times 2}{28 \times 2}x + \frac{81}{49}$$

$$F = \frac{9}{64}x^2 + \frac{27}{28}x + \frac{81}{49}$$

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

$$A = (6x - 5)^2$$

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

$$A = 36x^2 - 60x + 25$$

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

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

$$B = 25x^2 + 20x + 4$$

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

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

$$C = 20x^2 - 100x + 4x - 20$$

$$C = 20x^2 + (-100 + 4)x - 20$$

$$C = 20x^2 - 96x - 20$$

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

$$D = (8x)^2 - 1^2$$

$$D = 64x^2 - 1$$

$$E = \left(\frac{4}{5}x - \frac{3}{2}\right)^2$$

$$E = \left(\frac{4}{5}x\right)^2 - 2 \times \frac{4}{5}x \times \frac{3}{2} + \left(\frac{3}{2}\right)^2$$

$$E = \frac{16}{25}x^2 - \frac{12 \times 2}{5 \times 2}x + \frac{9}{4}$$

$$E = \frac{16}{25}x^2 - \frac{12}{5}x + \frac{9}{4}$$

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

$$F = -((8x)^2 - 5^2)$$

$$F = -(64x^2 - 25)$$

$$F = -64x^2 + 25$$

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

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

$$A = 4x \times 9x + 4x \times 4 - 9 \times 9x - 9 \times 4$$

$$A = 36x^2 + 16x - 81x - 36$$

$$A = 36x^2 + (16 - 81)x - 36$$

$$A = 36x^2 - 65x - 36$$

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

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

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

$$C = (2x + 6)^2$$

$$C = (2x)^2 + 2 \times 2x \times 6 + 6^2$$

$$C = 4x^2 + 24x + 36$$

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

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

$$D = 49x^2 - 98x + 49$$

$$E = \left(\frac{5}{6}x - \frac{9}{7}\right) \times \left(\frac{5}{6}x + \frac{9}{7}\right)$$

$$E = \left(\frac{5}{6}x\right)^2 - \left(\frac{9}{7}\right)^2$$

$$E = \frac{25}{36}x^2 - \frac{81}{49}$$

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

$$F = -\left((7x)^2 - 2 \times 7x \times 7 + 7^2\right)$$

$$F = -(49x^2 - 98x + 49)$$

$$F = -49x^2 + 98x - 49$$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

$$A = (8x + 9)^2$$

$$A = (8x)^2 + 2 \times 8x \times 9 + 9^2$$

$$A = 64x^2 + 144x + 81$$

$$B = (2x - 9) \times (9x + 2)$$

$$B = 2x \times 9x + 2x \times 2 - 9 \times 9x - 9 \times 2$$

$$B = 18x^2 + 4x - 81x - 18$$

$$B = 18x^2 + (4 - 81)x - 18$$

$$B = 18x^2 - 77x - 18$$

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

$$C = (7x)^2 - 9^2$$

$$C = 49x^2 - 81$$

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

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

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

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

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

$$E = \frac{4}{9}x^2 - 16$$

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

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

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

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

$$F = -(8x^2 + 12x - 8)$$

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

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

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

$$A = 5x \times 7x + 5x \times 5 - 7 \times 7x - 7 \times 5$$

$$A = 35x^2 + 25x - 49x - 35$$

$$A = 35x^2 + (25 - 49)x - 35$$

$$A = 35x^2 - 24x - 35$$

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

$$B = x^2 + 2 \times x \times 10 + 10^2$$

$$B = x^2 + 20x + 100$$

$$C = (10x - 4)^2$$

$$C = (10x)^2 - 2 \times 10x \times 4 + 4^2$$

$$C = 100x^2 - 80x + 16$$

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

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

$$D = 16x^2 - 4$$

$$E = \left(\frac{1}{2}x - \frac{2}{5}\right)^2$$

$$E = \left(\frac{1}{2}x\right)^2 - 2 \times \frac{1}{2}x \times \frac{2}{5} + \left(\frac{2}{5}\right)^2$$

$$E = \frac{1}{4}x^2 - \frac{2 \times 2}{5 \times 2}x + \frac{4}{25}$$

$$E = \frac{1}{4}x^2 - \frac{2}{5}x + \frac{4}{25}$$

$$F = -(8x + 4)^2$$

$$F = -\left((8x)^2 + 2 \times 8x \times 4 + 4^2\right)$$

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

$$F = -64x^2 - 64x - 16$$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

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

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

$$A = 100x^2 - 60x + 9$$

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

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

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

$$C = (6x + 9)^2$$

$$C = (6x)^2 + 2 \times 6x \times 9 + 9^2$$

$$C = 36x^2 + 108x + 81$$

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

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

$$D = 20x^2 - 25x + 16x - 20$$

$$D = 20x^2 + (-25 + 16)x - 20$$

$$D = 20x^2 - 9x - 20$$

$$E = \left(5x + \frac{9}{5}\right)^2$$

$$E = (5x)^2 + 2 \times 5x \times \frac{9}{5} + \left(\frac{9}{5}\right)^2$$

$$E = 25x^2 + \frac{18 \times 5}{1 \times 5}x + \frac{81}{25}$$

$$E = 25x^2 + 18x + \frac{81}{25}$$

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

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

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

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

$$F = -(21x^2 + 40x - 21)$$

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