

Corrigé de l'exercice 1

Développer chacune des expressions littérales suivantes :

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

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

$$A = 40x^2 + 25x - 64x - 40$$

$$A = 40x^2 + (25 - 64)x - 40$$

$$A = 40x^2 - 39x - 40$$

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

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

$$B = 4x^2 - 24x + 36$$

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

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

$$C = x^2 - 4$$

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

$$D = (8x)^2 + 2 \times 8x \times 1 + 1^2$$

$$D = 64x^2 + 16x + 1$$

$$E = \left(\frac{7}{6}x - \frac{7}{4}\right) \times \left(\frac{7}{4}x + \frac{7}{6}\right)$$

$$E = \frac{7}{6}x \times \frac{7}{4}x + \frac{7}{6}x \times \frac{7}{6} + -\frac{7}{4} \times \frac{7}{4}x + -\frac{7}{4} \times \frac{7}{6}$$

$$E = \frac{49}{24}x^2 + \frac{49}{36}x + -\frac{49}{16}x + -\frac{49}{24}$$

$$E = \frac{49}{24}x^2 + \left(\frac{49}{36} - \frac{49}{16}\right)x - \frac{49}{24}$$

$$E = \frac{49}{24}x^2 + \left(\frac{49 \times 4}{36 \times 4} - \frac{49 \times 9}{16 \times 9}\right)x - \frac{49}{24}$$

$$E = \frac{49}{24}x^2 + \left(\frac{196}{144} - \frac{441}{144}\right)x - \frac{49}{24}$$

$$E = \frac{49}{24}x^2 - \frac{245}{144}x - \frac{49}{24}$$

$$F = -(5x + 10) \times (5x - 10)$$

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

$$F = -(25x^2 - 100)$$

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

Corrigé de l'exercice 2

Développer chacune des expressions littérales suivantes :

$$A = (3x + 4)^2$$

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

$$A = 9x^2 + 24x + 16$$

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

$$B = 4x \times 3x + 4x \times 4 - 3 \times 3x - 3 \times 4$$

$$B = 12x^2 + 16x - 9x - 12$$

$$B = 12x^2 + (16 - 9)x - 12$$

$$B = 12x^2 + 7x - 12$$

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

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

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

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

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

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

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

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

$$E = 4x^2 - \frac{8}{9}x + \frac{4}{81}$$

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

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

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

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

Corrigé de l'exercice 3

Développer chacune des expressions littérales suivantes :

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

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

$$A = x^2 - 49$$

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

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

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

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

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

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

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

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

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

$$D = x^2 - 2 \times x \times 6 + 6^2$$

$$D = x^2 - 12x + 36$$

$$E = \left(\frac{3}{10}x + \frac{1}{2}\right) \times \left(\frac{1}{2}x - \frac{3}{10}\right)$$

$$E = \frac{3}{10}x \times \frac{1}{2}x + \frac{3}{10}x \times \left(-\frac{3}{10}\right) + \frac{1}{2} \times \frac{1}{2}x + \frac{1}{2} \times \left(-\frac{3}{10}\right)$$

$$E = \frac{3}{20}x^2 + -\frac{9}{100}x + \frac{1}{4}x + -\frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \left(\frac{-9}{100} + \frac{1}{4}\right)x - \frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \left(\frac{-9}{100} + \frac{1 \times 25}{4 \times 25}\right)x - \frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \left(\frac{-9}{100} + \frac{25}{100}\right)x - \frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \frac{16}{100}x - \frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \frac{4 \times 4}{25 \times 4}x - \frac{3}{20}$$

$$E = \frac{3}{20}x^2 + \frac{4}{25}x - \frac{3}{20}$$

$$F = -(8x + 3)^2$$

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

$$F = -(64x^2 + 48x + 9)$$

$$F = -64x^2 - 48x - 9$$

Corrigé de l'exercice 4

Développer chacune des expressions littérales suivantes :

$$A = (5x + 3)^2$$

$$A = (5x)^2 + 2 \times 5x \times 3 + 3^2$$

$$A = 25x^2 + 30x + 9$$

$$B = (6x + 8) \times (6x - 8)$$

$$B = (6x)^2 - 8^2$$

$$B = 36x^2 - 64$$

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

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

$$C = 81x^2 - 18x + 1$$

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

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

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

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

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

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

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

$$E = -(30x^2 + 9x - 100x - 30)$$

$$E = -(30x^2 + (9 - 100)x - 30)$$

$$E = -(30x^2 - 91x - 30)$$

$$E = -30x^2 + 91x + 30$$

$$F = \left(\frac{1}{6}x - 5\right) \times \left(\frac{1}{6}x + 5\right)$$

$$F = \left(\frac{1}{6}x\right)^2 - 5^2$$

$$F = \frac{1}{36}x^2 - 25$$

Corrigé de l'exercice 5

Développer chacune des expressions littérales suivantes :

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$E = \left(\frac{1}{4}x + \frac{1}{3}\right) \times \left(\frac{1}{4}x - \frac{1}{3}\right)$$

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

$$E = \frac{1}{16}x^2 - \frac{1}{9}$$

$$F = -(10x + 7)^2$$

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

$$F = -(100x^2 + 140x + 49)$$

$$F = -100x^2 - 140x - 49$$

Corrigé de l'exercice 6

Développer chacune des expressions littérales suivantes :

$$A = (10x + 4)^2$$

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

$$A = 100x^2 + 80x + 16$$

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

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

$$B = 64x^2 - 9$$

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

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

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

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

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

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

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

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

$$E = \left(\frac{9}{2}x + 1\right) \times \left(x - \frac{9}{2}\right)$$

$$E = \left(\frac{9}{2}x + 1\right) \times \left(x - \frac{9}{2}\right)$$

$$E = \frac{9}{2}x \times x + \frac{9}{2}x \times \left(-\frac{9}{2}\right) + 1 \times x + 1 \times \left(-\frac{9}{2}\right)$$

$$E = \frac{9}{2}x^2 + -\frac{81}{4}x + x + -\frac{9}{2}$$

$$E = \frac{9}{2}x^2 + \left(\frac{-81}{4} + 1\right)x - \frac{9}{2}$$

$$E = \frac{9}{2}x^2 + \left(\frac{-81}{4} + \frac{1 \times 4}{1 \times 4}\right)x - \frac{9}{2}$$

$$E = \frac{9}{2}x^2 + \left(\frac{-81}{4} + \frac{4}{4}\right)x - \frac{9}{2}$$

$$E = \frac{9}{2}x^2 - \frac{77}{4}x - \frac{9}{2}$$

$$F = -(9x - 9)^2$$

$$F = -\left((9x)^2 - 2 \times 9x \times 9 + 9^2\right)$$

$$F = -(81x^2 - 162x + 81)$$

$$F = -81x^2 + 162x - 81$$