

### Exercice 1

$$A = \frac{4,5 \times 10^5 \times 6 \times 10^{-5}}{1,5 \times 10^4} = \frac{4,5 \times 6}{1,5 \times 10^4} = 4,5 \times 4 \times 10^{-4} = 18 \times 10^{-4}$$

$$B = \frac{3000 \times 10^5 \times 4 \times 10^{-2}}{8 \times 10^4 \times (-5) \times (10^4)^3} = \frac{3 \times 10^3 \times 10^5 \times 4 \times 10^{-2}}{8 \times 10^4 \times (-5) \times 10^{12}} = \frac{3 \times 4 \times 10^{3+5-2-4-12}}{-40} = -3 \times 10^{-11}$$

Écriture décimale

$$A = 0,0018 \text{ et } B = -0,00000000003$$

Écriture scientifique

$$A = 1,8 \times 10^{-3} \text{ et } B = -3 \times 10^{-11}$$

### Exercice 2

$$1. (4x - 1)^2 + (x + 2)^2 = 16x^2 - 8x + 1 + x^2 + 4x + 4 = 17x^2 - 4x + 5$$

$$2. (5t + 4)^2 + (5t + 4)(5t - 4) = 25t^2 + 40t + 16 + 25t^2 - 16 = 50t^2 + 40t$$

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

$$4. (5a - 4)(a + 2) = 5a(a + 2) - 4(a + 2) = 5a^2 + 10a - 4a - 8 = 5a^2 + 6a - 8$$

$$5. (3x+2)(5-2x) = 3x(5-2x) + 2(5-x-2x) = 15x - 6x^2 + 10 - 4x = -6x^2 + 11x + 10$$

6.

$$\begin{aligned} 4 \left( \frac{3x}{5} - 2 \right)^2 - (x - 4)(x + 4) &= 4 \left( \frac{9x^2}{25} - \frac{12x}{5} + 4 \right) - (x^2 - 16) \\ &= \frac{36x^2}{25} - \frac{48x}{5} + 16 - x^2 + 16 \\ &= \frac{11x^2}{25} - \frac{48x}{5} + 32 \end{aligned}$$

### Exercice 3

$$1. (4x - 1)^2 + (x + 2)(4x - 1) = (4x + 1)(4x + 1 + x + 2) = (4x + 1)(5x + 3)$$

$$2. 4x - 8 + (x - 2)(7 - 3x) = 4(x - 2) + (x - 2)(7 - 3x) = (x - 2)(4 + 7 - 3x) = (x - 2)(11 - 3x)$$

$$3. 16x^2 - 8x + 1 = (x - 4)^2$$

$$4. 25 + 36b^2 + 60b = (6b + 5)^2$$

$$5. 8x^2 + 16x = 8x(x + 2)$$

$$6. -16a^2 + 25 = (5 - 4a)(5 + 4a)$$