

Exercice 1*Je développe*

$$\begin{aligned}
 E &= (5x+1)(4-3x) - (3x-4)^2 \\
 &= (20x - 15x^2 + 4 - 3x) - (9x^2 - 24x + 16) \\
 &= 17x - 15x^2 + 4 - 9x^2 + 24x - 16 \\
 E &= -24x^2 + 41x - 12
 \end{aligned}$$

Je factorise

$$\begin{aligned}
 E &= (5x+1)(4-3x) - (3x-4)^2 \\
 &= (5x+1)(4-3x) - (4-3x)^2 \\
 &= (4-3x)[(5x+1) - (4-3x)] \\
 &= (4-3x)(5x+1-4+3x) \\
 E &= (4-3x)(8x-3)
 \end{aligned}$$

Exercice 2*Je calcule*

$$\begin{aligned}
 A &= 3^2 + 5 \times 2^4 - 16 \div 2^3 \\
 A &= 9 + 5 \times 16 - 16 \div 8 \\
 A &= 9 + 80 - 2 \\
 A &= 87
 \end{aligned}$$

Je calcule

$$\begin{aligned}
 B &= \frac{16 \times (10^{-1})^2 \times 10^5}{4 \times 10^{-3}} \\
 B &= \frac{16 \times 10^{-2} \times 10^5}{4 \times 10^{-3}} \\
 B &= \frac{4 \times 10^3}{10^{-3}} \\
 B &= 4 \times 10^{3+3} \\
 B &= 4 \times 10^6
 \end{aligned}$$

Exercice 3*Je simplifie*

$$\begin{aligned}
 E &= \frac{x^4 \times (x^{-2}y)^5 \times x^{-6}y^3}{x^2y^4 \times (x^{-3}y^2)^3 \times x^{-8}y} \\
 E &= \frac{x^4 \times x^{-10}y^5 \times x^{-6}y^3}{x^2y^4 \times x^{-9}y^6 \times x^{-8}y} \\
 E &= \frac{x^{4-10-6}y^{5+3}}{x^{2-9-8}y^{4+6+1}} \\
 E &= \frac{x^{-12}y^8}{x^{-15}y^{11}} \\
 E &= x^{-12+15}y^{8-11} \\
 E &= x^3y^{-3}
 \end{aligned}$$

Je calcule E pour x = 10^2 et y = 0.01

$$\begin{aligned}
 E &= x^3 \times y^{-3} \\
 E &= (10^2)^3 \times (10^{-2})^{-3} \\
 E &= 10^6 \times 10^6 \\
 E &= 10^{6+6} \\
 E &= 10^{12}
 \end{aligned}$$

Exercice 4*Je donne l'écriture scientifique de a :*

$$\begin{aligned}
 a &= 175 \times 10^{25} \times 2 \times 10^{-14} \\
 a &= 175 \times 2 \times 10^{25-14} \\
 a &= 350 \times 10^{11} \\
 a &= 3.5 \times 10^{13}
 \end{aligned}$$

Je donne l'écriture scientifique de b :

$$\begin{aligned}
 b &= 15 \times 10^{-9} + 5 \times 10^{-8} - 0.25 \times 10^{-7} \\
 b &= 15 \times 10^{-9} + 50 \times 10^{-9} - 25 \times 10^{-9} \\
 b &= (15 + 50 - 25) \times 10^{-9} \\
 b &= 40 \times 10^{-9} \\
 b &= 4 \times 10^{-8}
 \end{aligned}$$