

Puissances, racines et notation scientifique

Exercice 1.

a) $16x^{10}y^2 \cdot (-8x^6y^{12}) = -128x^{16}y^{14}$

b) 7^{2008}

c) $7^{-10} \cdot \frac{1}{7^3} = \frac{1}{7^{13}}$

d) $\frac{a^6b^2}{a^3b^{-2}} = a^3b^4$

e) $\frac{x^{24}}{y^{16}}$

f) $x^{3n}y^n \cdot x^4y^9 = x^{3n+4}y^{n+9}$

Exercice 2.

a) $d = 30 \cdot 149,6 \cdot 10^6 = 4'488 \cdot 10^6 \text{ km} = 4,488 \cdot 10^9 \text{ km} = 4,488 \cdot 10^{12} \text{ m}$

b) $t = \frac{4,488 \cdot 10^9}{3 \cdot 10^5} = 1,496 \cdot 10^4 \text{ km} = 4 \text{ h } 15 \text{ min } 20 \text{ sec}$

Exercice 3.

$$E = \frac{1}{2} \cdot 9,1093829 \cdot 10^{-31} \cdot 9 \cdot 10^{10} = 4,09922231 \cdot 10^{-20} \text{ J}$$

Exercice 4.

a) $31,2 \cdot 10^6 = 3,12 \cdot 10^7$

b) $6,3 \cdot 10^{40}$

c) $125 \cdot 10^9 \cdot \frac{1}{36} \cdot 10^8 = 3,472 \cdot 10^{17}$