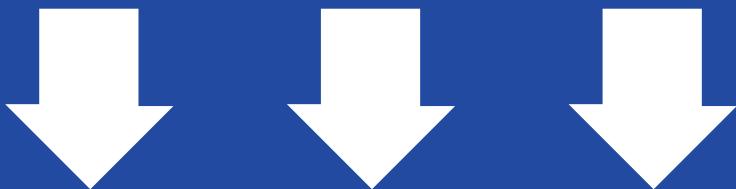


Mathématiques Enseignement Scientifique

a^x : Variations & Propriétés



CORRIGÉ DE L'EXERCICE

SIMPLIFICATIONS x^{\dots}

2

CORRECTION

Simplifions au maximum les expressions suivantes:

$$1. \frac{x^{-6} x x^7 x x}{x^9 x (x^3)^n} :$$

$$\frac{x^{-6} x x^7 x x}{x^9 x (x^3)^n} = \frac{x^{(-6+7+1)}}{x^9 x x^{3n}} = \frac{x^{(-6+7+1)}}{x^{(9+3n)}} = x^{(-6+7+1)} x x^{(-9-3n)}.$$

D'où: $\frac{x^{-6} x x^7 x x}{x^9 x (x^3)^n} = x^{(2)} x x^{(-3n-9)} = x^{(2-3n-9)} = x^{(-3n-7)}.$

$$2. \frac{x^2 x x^{-9} x (x^n)^9 x x^{51}}{x^{64} x (x^n)^3} :$$

$$\frac{x^2 x x^{-9} x (x^n)^9 x x^{51}}{x^{64} x (x^n)^3} = \frac{x^2 x x^{-9} x x^{9n} x x^{51}}{x^{64} x x^{3n}} = \frac{x^{(2-9+9n+51)}}{x^{(64+3n)}} = x^{(2-9+9n+51)} x x^{(-64-3n)}.$$

D'où: $\frac{x^2 x x^{-9} x (x^n)^9 x x^{51}}{x^{64} x (x^n)^3} = x^{(9n+44)} x x^{(-3n-64)} = x^{(9n+44-3n-64)} = x^{(6n-20)}.$

$$3. \frac{x^{-8} x (x^{-8})^n x (x^n)^{-8}}{x^{-5} x x^4 x x^0} :$$

$$\frac{x^{-8} x (x^{-8})^n x (x^n)^{-8}}{x^{-5} x x^4 x x^0} = \frac{x^{-8} x x^{-8n} x x^{-8n}}{x^{-5} x x^4 x x^0} = \frac{x^{(-8-8n-8n)}}{x^{(-5+4+0)}} = x^{(-8-8n-8n)} x x^{(5-4-0)}.$$

$$\text{D'où: } \frac{x^{-8} \times (x^{-8})^n \times (x^n)^{-8}}{x^{-5} \times x^4 \times x^0} = x^{(-16n-8)} \times x^{(1)} = x^{(-16n-8+1)} = x^{(-16n-7)}.$$