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TLE

Technologique Mathématiques

ax : Variations & Propriétés



CORRIGÉ DE L'EXERCICE

SIMPLIFIONS x^{\dots}

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CORRECTION

Simplifions au maximum les expressions suivantes:

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

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

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

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

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

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

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

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

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