RADICACIÓN

Problema 61:

Simplifica:

$$\{[\frac{x^{a^2-b^2}}{\sqrt[a]{x^{a^3-ab^2}}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n$$

Solución Problema 61:

$$\{[\frac{x^{a^2-b^2}}{\sqrt[a]{x^{a^3-ab^2}}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n = \{[\frac{x^{a^2-b^2}}{x^{\frac{a^3-ab^2}{a}}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n = \{[\frac{x^{a^2-b^2}}{x^{\frac{a^3}{a}-\frac{ab^2}{a}}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n = \{[\frac{x^{a^2-b^2}}{x^{a^2-b^2}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n =$$

$$= \{[1]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n = \{\sqrt[a]{1} \cdot a^{3(a+b)}\}^n = \{1 \cdot a^{3(a+b)}\}^n = 1^n \cdot [a^{3(a+b)}]^n = a^{3n(a+b)}$$

Luego:

$$\{[\frac{x^{a^2-b^2}}{\sqrt[a]{x^{a^3-ab^2}}}]^{\frac{1}{a}} \cdot a^{3(a+b)}\}^n = a^{3n(a+b)}$$