RADICACIÓN

Problema 52:

Simplificar

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

Solución Problema 52:

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

$$= \sqrt[n]{\frac{a^{2n}}{a^n}} \cdot \sqrt{\left(\frac{a\sqrt{b}}{\sqrt[3]{ab}}\right)^{\frac{3}{2}}} = \frac{a^2}{a} \cdot \sqrt{\left(\frac{a\sqrt{b}}{\sqrt[3]{ab}}\right)^{\frac{3}{2}}} = a \cdot \left(\sqrt{\frac{a\sqrt{b}}{\sqrt[3]{ab}}}\right)^{\frac{3}{2}} = a \cdot \sqrt{\sqrt{\left(\frac{a\sqrt{b}}{\sqrt[3]{ab}}\right)^3}} =$$

$$= a \cdot \sqrt{\sqrt{\frac{a^3(\sqrt{b})^3}{\left(\sqrt[3]{ab}\right)^3}}} = a \cdot \sqrt{\sqrt{\frac{a^3(\sqrt{b})^3}{ab}}} = a \cdot \sqrt{\sqrt{\frac{a^2 \cdot \cancel{a}\sqrt{b \cdot b^2}}{\cancel{a}b}}} =$$

$$= a \cdot \sqrt{\sqrt{\frac{a^2 \cdot \cancel{b}\sqrt{b}}{\cancel{b}}}} = a \cdot \sqrt{\sqrt{a^2 \cdot \sqrt{b}}} = \sqrt{a^2\sqrt{a^2 \cdot \sqrt{b}}} = \sqrt{\sqrt{a^4 \cdot a^2 \cdot \sqrt{b}}} =$$

$$= \sqrt[4]{a^6 \cdot \sqrt{b}} = \sqrt[4]{\sqrt{a^{12} \cdot b}} = \sqrt[8]{a^{12} \cdot b}$$