OPERAȚII CU RADICALI ȘI PUTERI

Aduceți la forma cea mai simplă:

1) $E(a,b)=\dfrac{\sqrt[4]{a}}{\sqrt[12]{b^{10}}}\cdot\left(\dfrac{a^{-\frac{1}{2}}\cdot\sqrt[3]{b}}{\sqrt[4]{a\cdot b^{-1}}}\right)^{\frac{1}{3}}\cdot\left(\dfrac{a^{-\frac{3}{8}}}{b^{-\frac{2}{3}}}\right)^{\frac{4}{3}}$

2) $E=\dfrac{\sqrt[4]{a}}{\sqrt[3]{b\sqrt{b}}}\cdot\left(\dfrac{a^{-\frac{3}{4}}\cdot\sqrt[3]{b^{6}}}{\sqrt[4]{a^{-1}b^{2}}}\right)^{\frac{1}{2}}\cdot\left(\dfrac{b^{\frac{3}{16}}}{a^{-\frac{3}{4}}}\right)^{\frac{4}{3}}$

3) $E=\dfrac{(x^2-y^2)(\sqrt[3]{x}+\sqrt[3]{y})}{\sqrt[3]{x^5}+\sqrt[3]{x^2y^3}-\sqrt[3]{x^3y^2}-\sqrt[3]{y^5}}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$

Prof. Ovidiu Bădescu

Aduceți la forma cea mai simplă

$$E=\frac{\sqrt[4]{a}}{\sqrt[3]{b\sqrt{b}}}\cdot\left(\frac{a^{-\frac{3}{4}}\cdot\sqrt[3]{b^6}}{\sqrt[4]{a^{-1}b^2}}\right)^{\frac{1}{2}}\cdot\left(\frac{b^{\frac{3}{16}}}{a^{-\frac{3}{4}}}\right)^{\frac{4}{3}}$$

$$E_1)\ E=\frac{a^{1/4}}{b^{1/3}\cdot b^{1/6}}\cdot\left(\frac{a^{-\frac{3}{4}}\cdot b^2}{a^{-\frac{1}{4}}\cdot b^{1/2}}\right)^{\frac{1}{2}}\cdot\frac{b^{\frac{3}{16}\cdot\frac{4}{3}}}{a^{-\frac{3}{4}\cdot\frac{4}{3}}}$$

$$E_2)\ E=\frac{a^{1/4}}{b^{\frac{1}{3}+\frac{1}{6}}}\cdot\frac{a^{-\frac{3}{8}}\cdot b^1}{a^{-\frac{1}{8}}\cdot b^{\frac{1}{4}}}\cdot\frac{b^{\frac{1}{4}}}{a^{-1}}$$

$$E_3)\ E=\frac{a^{1/4}}{b^{1/2}}\cdot\left(a^{-\frac{3}{8}+\frac{1}{8}}\cdot b^{1-\frac{1}{4}}\right)\cdot\left(b^{\frac{1}{4}}\cdot a\right)$$

$$E_4)\ E=\left(a^{1/4}\cdot b^{-1/2}\right)\cdot\left(a^{-\frac{1}{4}}\cdot b^{\frac{3}{4}}\right)\cdot\left(b^{\frac{1}{4}}\cdot a\right)$$

$$E_5)\ a^{\frac{1}{4}-\frac{1}{4}+1}\cdot b^{-\frac{1}{2}-\frac{1}{4}+\frac{1}{4}}$$

$$E_6)\ E=a^1 b^{-\frac{1}{2}}=\frac{a}{b^{1/2}}=\frac{a}{\sqrt{b}}$$

$$E_7)\ E=\frac{a\sqrt{b}}{b}$$

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Aduceți la forma cea mai simplă:

$$E=\frac{(x^2-y^2)(\sqrt[3]{x}+\sqrt[3]{y})}{\sqrt[3]{x^5}+\sqrt[3]{x^2y^3}-\sqrt[3]{x^3y^2}-\sqrt[3]{y^5}}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E_1)\ E=\frac{(x^2-y^2)(\sqrt[3]{x}+\sqrt[3]{y})}{\sqrt[3]{x^2}(\sqrt[3]{x^3}+\sqrt[3]{y^3})-\sqrt[3]{y^2}(\sqrt[3]{x^3}+\sqrt[3]{y^3})}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E=\frac{(x^2-y^2)(\sqrt[3]{x}+\sqrt[3]{y})}{(x+y)(\sqrt[3]{x^2}-\sqrt[3]{y^2})}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E=\frac{(x-y)\cancel{(x+y)}(\sqrt[3]{x}+\sqrt[3]{y})}{\cancel{(x+y)}(\sqrt[3]{x}-\sqrt[3]{y})(\sqrt[3]{x}+\sqrt[3]{y})}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E_2)\ E=\frac{x-y}{\sqrt[3]{x}-\sqrt[3]{y}}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E=\frac{(\sqrt[3]{x})^3-(\sqrt[3]{y})^3}{\sqrt[3]{x}-\sqrt[3]{y}}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E=\frac{(\sqrt[3]{x}-\sqrt[3]{y})(\sqrt[3]{x^2}+\sqrt[3]{xy}+\sqrt[3]{y^2})}{\sqrt[3]{x}-\sqrt[3]{y}}-(\sqrt[3]{xy}+\sqrt[3]{y^2})$$

$$E=\sqrt[3]{x^2}+\cancel{\sqrt[3]{xy}}+\cancel{\sqrt[3]{y^2}}-\cancel{\sqrt[3]{xy}}-\cancel{\sqrt[3]{y^2}}=\sqrt[3]{x^2}$$

Prof. Ovidiu Badescu