$(a^3+b^3)=(a+b)(a^2-ab+b^2)$

$(a+b)^3=\mathbf{a^3}+3a^2b+3ab^2+\mathbf{b^3}$

избавиться от корней в знаменателе

4)(**) **x^3 + y^3 + z^3 − 3xyz** =**x^3** +3x^2y + 3xy^2+ **y^3** + z^3 − 3xyz - 3x^2y - 3xy^2=
= (x+y)^3+ z^3 - 3xy(z + x + y) = (x+y+z)(x^2 + 2xy + y^2 - xz - yz + z^2) - 3xy(z + x + y) =
(x+y+z)(x^2 - xy + y^2 - xz - yz + z^2)=(x+y+z)(**x^2 + y^2 + z^2** - xz - yz - xy)

$\sqrt[3]{8}=2$

$\sqrt[3]{27}=3$

$\frac{1}{\sqrt{a}}=\frac{\sqrt{a}}{\sqrt{a}\cdot\sqrt{a}}=\frac{\sqrt{a}}{a}$

$\sqrt{a}\cdot\sqrt{a}=a$

$2\cdot 2=4$

$\sqrt{4}=2$

$\sqrt{5}=2,\ldots$

$\frac{1}{\sqrt{a}+\sqrt{b}}=\frac{\sqrt{a}+\sqrt{b}}{(\sqrt{a}+\sqrt{b})^2}$ $\quad a+2\sqrt{a}\sqrt{b}+b \quad \frac{\sqrt{a}-\sqrt{b}}{(\sqrt{a}+\sqrt{b})(\sqrt{a}-\sqrt{b})}=\frac{\sqrt{a}-\sqrt{b}}{a-b}$

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

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

$=\frac{\ldots}{(a^2-b^3)}$

$\frac{1}{\sqrt[3]{a}+\sqrt[3]{b}+\sqrt[3]{c}}=\frac{\qquad}{(a+b+c)-3\sqrt[3]{abc}}=\frac{\qquad}{\qquad}=$

$=\frac{\qquad}{(a+b+c)^3-27abc}$