

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

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

избавиться от корней в знаменателе

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

$$4)(**) x^3 + y^3 + z^3 - 3xyz = x^3 + 3x^2y + 3xy^2 + y^3 + z^3 - 3xyz - 3x^2y - 3xy^2 =$$

$$= (x+y)^3 + z^3 - 3xy(z+x+y) = (x+y+z)(x^2 + 2xy + y^2 - xz - yz + z^2) - 3xy(z+x+y) =$$

$$(x+y+z)(x^2 - xy + y^2 - xz - yz + z^2) = (x+y+z)(x^2 + y^2 + z^2 - xz - yz - xy)$$

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

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

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

$$a + 2\sqrt{a}b + b$$

$$\frac{\sqrt{a} + \sqrt{b}}{(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})} = \frac{\sqrt{a} + \sqrt{b}}{a - b}$$

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

$$2 \cdot 2 = 4$$

$$\sqrt{4} = 2$$

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

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

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

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

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

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