MATEMATIKA

2. letnik – splošna gimnazija

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21. julij 2025

Vsebina

Section 1

Potence in koreni

1. Potence in koreni
    - Koreni poljubnih stopenj
    - Potence z racionalnimi eksponenti
    - Iracionalne enačbe

Koreni poljubnih stopenj

Naloga

Poenostavite izraz in ga delno korenite.

Naloga

Poenostavite izraz in ga delno korenite.

- $\sqrt[3]{xy^2\sqrt{x^5y}}$
- $\sqrt{a\sqrt{a^2\sqrt{a^3}}}$
- $\sqrt[4]{a^3b^2\sqrt{ab^5}}$
- $\sqrt[4]{ab^2\sqrt[3]{ab}}$
- $\sqrt[3]{a\sqrt[4]{a\sqrt[5]{a}}}$
- $\sqrt[5]{x^4y\sqrt[4]{x^5y^3}}$
- $\sqrt[6]{a^2b^3\sqrt{a^8\sqrt[3]{b}}}$
- $\sqrt[3]{x\sqrt{y^3\sqrt[4]{x^3\sqrt[5]{y^6y^{-1}}}}}$

Naloga

Izračunajte.

Naloga

Izračunajte.

- $\sqrt[5]{\frac{1}{32}}$
- $\sqrt[4]{\frac{16}{81}}$
- $\sqrt[3]{-8}$
- $\sqrt[4]{-625}$
- $\sqrt[3]{0.125}$
- $\sqrt[4]{0.0016}$

Naloga

Poenostavite.

Naloga

Poenostavite.

- $\sqrt[18]{x^{15}}$
- $\sqrt[9]{a^{6}}$
- $\sqrt[30]{y^{18}}$
- $\sqrt[20]{b^{30}}$

Naloga

Racionalizirajte ulomke.

Naloga

Racionalizirajte ulomke.

- $\dfrac{1}{3-\sqrt{x}}$
- $\dfrac{x-1}{\sqrt[3]{x}-1}$
- $\dfrac{1}{\sqrt[4]{2}-1}$
- $\dfrac{1}{2-4\sqrt[3]{a}}$
- $\dfrac{8x}{2\sqrt[3]{x}+1}$
- $\dfrac{\sqrt[4]{y}}{2-\sqrt[4]{y}}$
- $\dfrac{2}{a-\sqrt[3]{b}}$
- $\dfrac{1}{2-\sqrt[4]{3}}$
- $\dfrac{3}{1+\sqrt[5]{2}}$

Naloga

Poenostavite in delno korenite izraz..

Naloga

Poenostavite in delno korenite izraz..

- $\dfrac{\sqrt[4]{2}}{\sqrt{2\sqrt{8}}}$
- $\dfrac{\sqrt[3]{9}}{\sqrt[5]{3}\sqrt{27}}$
- $\dfrac{\sqrt{\sqrt{\sqrt{1}}}}{\sqrt[17]{1}}$
- $\dfrac{\sqrt{\sqrt{a}}}{\sqrt[3]{a^2}}$
- $\dfrac{\sqrt{a\sqrt[3]{a^{-1}}\cdot\sqrt[3]{a^2\sqrt[5]{a}}}}{\sqrt[5]{a\sqrt{a^{-5}}}}$
- $\dfrac{\sqrt{x^3\sqrt[4]{x^3\sqrt{x}}}}{\sqrt[4]{x^{-3}\sqrt[4]{x}}}$
- $\dfrac{\sqrt[7]{b^{13}\sqrt{b^{-2}}}}{\sqrt{\sqrt{b^{-1}}}}$
- $\dfrac{\sqrt[3]{x^2\sqrt[4]{x^{-1}}}\cdot\sqrt[4]{x^3\sqrt{x}}}{\sqrt[4]{x\sqrt{x\sqrt[3]{x^{-1}}}}}$
- $\dfrac{\sqrt{8ab^{-1}}}{\sqrt{0.5\sqrt[3]{8ab^2}}}$

Naloga

Izračunajte natančno vrednost korena.

Naloga

Izračunajte natančno vrednost korena.

- $\sqrt{31-12\sqrt{3}}$
- $\sqrt{18+8\sqrt{2}}$
- $\sqrt{9-4\sqrt{5}}$
- $\sqrt{17+2\sqrt{2}}$

Naloga

Poenostavite izraz in ga delno korenite.

Naloga

Poenostavite izraz in ga delno korenite.

- $\dfrac{\sqrt[5]{xy^3\sqrt[4]{x^2y^3}}}{\sqrt[10]{\sqrt{x}}}$
- $\dfrac{\sqrt[4]{ab^3\sqrt[3]{a^2b^3}}}{\sqrt{\sqrt[6]{a}}}$
- $\left(\dfrac{1-z}{1-\sqrt[3]{z}}-\sqrt[3]{z}\right)\left(1-\sqrt[6]{z^4}\right)$
- $\sqrt[3]{\sqrt{\sqrt{4096}}}+\sqrt{\sqrt{\sqrt{16}}}-\sqrt[5]{32}$
- $\dfrac{\sqrt[6]{ab^3\sqrt{a^3b}}}{\sqrt[4]{b^{-3}\sqrt[3]{a}}}$

Potence z racionalnimi eksponenti

Naloga

Izračunajte.

Naloga

Izračunajte.

- $8^{\frac{1}{3}} - 16^{\frac{2}{4}}$
- $27^{\frac{2}{3}} - 125^{\frac{1}{3}}$
- $(-8)^{-\frac{1}{3}}$
- $1000^{\frac{2}{3}} - 343^{\frac{2}{3}}$

Naloga

Izračunajte.

Naloga

Izračunajte.

- $\sqrt{625^{\frac{3}{4}} - \left(\frac{1}{2}\right)^{-2} + 4^{\frac{1}{3}} \cdot 16^{\frac{1}{3}}}$
- $\left(\left(\frac{4}{9}\right)^{-\frac{1}{2}} \cdot 32^{\frac{1}{5}} + 169^{\frac{1}{2}}\right)^{\frac{1}{2}}$
- $4 \cdot 0.16^{-\frac{1}{2}} - \sqrt[3]{5 \cdot 8^{\frac{1}{3}} + 2 \cdot 81^{\frac{3}{4}}}$
- $0.25^{-\frac{1}{2}} \cdot 0.001^{-\frac{1}{3}} - \sqrt[3]{10^2 + 0.2^{-2}}$
- $\left(2 \cdot 9^{\frac{3}{2}} + 5 \cdot 16^{\frac{1}{4}}\right)^{\frac{1}{3}}$
- $\left(3\frac{3}{8}\right)^{\frac{2}{3}} \cdot \left(\frac{1}{4}\right)^{-\frac{1}{2}} \cdot \left(3 - \sqrt{5}\right)\sqrt{7 + 3\sqrt{5}}$

Naloga

Izračunajte.

Naloga

Izračunajte.

- $2.25^{-0.5} \cdot \sqrt{4^{1.5} + 1}$
- $\left(3\frac{1}{16}\right)^{-0.5} \sqrt{0.125^{-\frac{2}{3}} + 3}^{4} + 0.002^{-\frac{2}{3}}$
- $6.25^{-0.5} \cdot 2.25^{1.5} + \sqrt{16^{0.75} + 1}$
- $\sqrt{10}\left(5^{-0.5} - 2\right)^{-1} - \sqrt{90}$
- $\sqrt{27^{\frac{2}{3}} + 0.25^{-2}} + \left(2 - \sqrt{5}\right)\sqrt{9 + 4\sqrt{5}} - \dfrac{1 + \sqrt{12}}{2 + \sqrt{3}}$

Naloga

Izraz zapišite s potencami in ga poenostavite.

Naloga

Izraz zapišite s potencami in ga poenostavite.

- $\left(\dfrac{1-z}{1-\sqrt[3]{z}}-\sqrt[3]{z}\right)\left(1-\sqrt[6]{z^4}\right)$
- $\dfrac{\sqrt[6]{ab^3\sqrt{a^3b}}}{\sqrt[4]{b^{-3}\sqrt[3]{a}}}$
- $\left(y^{\frac{2}{3}}x^{-0.25}\right)^6:\left(\sqrt{x^{-4}y^2}\cdot\sqrt{y\sqrt[3]{xy^{-3}}}\right)^3$
- $\dfrac{\sqrt[3]{x^{-4}\sqrt{x^2y^{-3}}}}{\sqrt[4]{x^{-3}y^2}}\cdot\left(x^{0.3}y^{0.2}\right)^5$
- $\dfrac{\sqrt[5]{x^{-2}\sqrt[3]{x^{-3}y^4}}}{y^{-\frac{1}{3}}x^{\frac{1}{2}}}\left(\sqrt[6]{\sqrt{y^{-3}}}\right)^4$
- $\dfrac{\sqrt[4]{x^{-2}y}}{\sqrt[6]{x^3\sqrt{y^{-7}}}}\sqrt[4]{x^2y^{-5}}^{\,2}$

Iracionalne enačbe

Naloga

Rešite enačbo.

Naloga

Rešite enačbo.

- $\sqrt{x-1}-5=0$
- $\sqrt{x+5}=2$
- $\sqrt{3-x}-5=0$
- $1+\sqrt{x-5}=0$

Naloga

Rešite enačbo.

Naloga

Rešite enačbo.

- $\sqrt{2x-1}+2x=x$
- $2+\sqrt[3]{x-1}=0$
- $\sqrt{x^2+2}-\sqrt{3x}=0$
- $x-\sqrt{5x-11}=1$
- $2x+3=\sqrt{3x^2+5x-1}$
- $\sqrt{-8x-4}=-2x$
- $\sqrt{x^2-1}-2=0$
- $\sqrt{x+3}=-9$

Naloga

Rešite enačbo.

Naloga

Rešite enačbo.

- $\sqrt{x} + \sqrt{x+1} = 3$
- $\sqrt{x-2} - 2 = \sqrt{x+2}$
- $\sqrt{x+1} = \sqrt{2} - \sqrt{x-1}$
- $\sqrt{x-6} + \sqrt{x+2} = 2$
- $\sqrt{x+5} - 3 = -\sqrt{x}$
- $\sqrt{3x+1} - 1 = \sqrt{x+4}$
- $\sqrt[3]{x+2-\sqrt{10+x}} = -2$
- $\sqrt{5+x} - 1 = \sqrt{3x+4}$

Naloga

Rešite enačbo.

Naloga

Rešite enačbo.

- $\sqrt[3]{x^3+7x^2+x+26}-3=x-1$
- $\sqrt[3]{5-x+\sqrt{2x+14}}-2=0$
- $\sqrt{x-2}-\sqrt{2x-3}=2$
- $\sqrt{x-6}-\sqrt{x+2}-2=0$
- $\sqrt{x^2+3x}+x=2$
- $\sqrt{x+3+\sqrt{x+2}}=\sqrt{3}$
- $\sqrt{x+7-\sqrt{2x-1}}=3$
- $\sqrt[5]{x^2+3x+34}=2$