

\*\*\*\* MLADEN SRAGA \*\*\*\*  
2011.

POTPUNO RIJEŠENI ZADACI  
PRIRUČNIK ZA SAMOSTALNO UČENJE

# **MATEMATIKA**

# **1**

KOMPLETNA  
RJEŠENJA

**2. i 3. ISPIT ZNANJA**

**M.I.M.-SRAGA**  
 $\sqrt{\alpha}$

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**BESPLATNA WEB-VARIJANTA**

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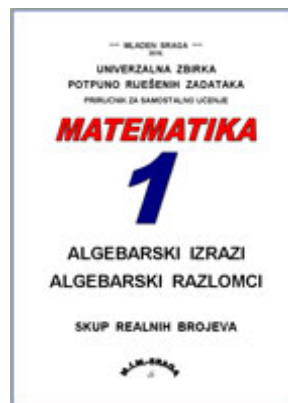
**SVI ZADACI IZ OVOG TESTA UZETI SU  
IZ NAŠE ZBIRKE POTPUNO RIJEŠENIH ZADATAKA:**

**UNIVERZALNA ZBIRKA POTPUNO RIJEŠENIH ZADATAKA**

**MATEMATIKA –1**

Priručnik za **SAMOSTALNO UČENJE**

Za prvi razred gimnazije , tehničke škole i svih ostalih škola



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Drugi i treći ispit znanja iz matematike za prvi razred gimnazije , tehničkih škola i svih ostalih škola ...

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centar za poduku i online poduku M.I.M.-Sraga

**2. i 3. test – ALGEBARSKI IZRAZI****Kompletna rješenja i upute:**

1.

$$\begin{aligned}
 a) \quad 4a \cdot (3a - b) - 2b \cdot (5a - 2b) &= 4a \cdot 3a + 4a \cdot (-b) - 2b \cdot 5a - 2b \cdot (-2b) = \\
 &= 4 \cdot 3 \cdot a^1 \cdot a^1 - 4 \cdot a \cdot b - 2 \cdot 5 \cdot b \cdot a - 2 \cdot (-2) \cdot b^1 \cdot b^1 = \\
 &= 12 \cdot a^2 - 4ab - 10ab + 4 \cdot b^{1+1} = \quad \text{vidi objašnjenje} \\
 &= 12a^2 - 14ab + 4b^2 \quad \downarrow \\
 &\quad \quad \quad -4ab - 10ab = (-4 - 10)ab = -14ab
 \end{aligned}$$

$$\begin{aligned}
 b) \quad (x-1) \cdot (x+2) - (x-3) \cdot (x+1) &= x \cdot (x+2) - 1 \cdot (x+2) - [x \cdot (x+1) - 3 \cdot (x+1)] = \\
 &= x \cdot x + x \cdot 2 - 1 \cdot x - 1 \cdot 2 - (x \cdot x + x \cdot 1 - 3 \cdot x - 3 \cdot 1) = \\
 &= x^2 + 2x - x - 2 - (x^2 + 1x - 3x - 3) = \\
 &= x^2 + x - 2 - (x^2 - 2x - 3) = \\
 &= x^2 + x - 2 - x^2 + 2x + 3 = \\
 &= \underbrace{x^2 - x^2}_{=0} + x + 2x - 2 + 3 = \\
 &= 3x + 1
 \end{aligned}$$

2. Kvadriramo po pravilu:  $(A+B)^2 = A^2 + 2 \cdot A \cdot B + B^2$  i  $(A-B)^2 = A^2 - 2 \cdot A \cdot B + B^2$ To pravilo možemo pisati i ovako:  $(I+II)^2 = I^2 + 2 \cdot I \cdot II + II^2$  i  $(I-II)^2 = I^2 - 2 \cdot I \cdot II + II^2$ 

$$\begin{aligned}
 a) \quad (3x - 4y)^2 &= (3x)^2 - 2 \cdot 3x \cdot 4y + (4y)^2 = \\
 &= 3^2 x^2 - 24xy + 4^2 y^2 = \\
 &= 9x^2 - 24xy + 16y^2
 \end{aligned}$$

$$\begin{aligned}
 b) \quad \left(\frac{2}{3}x^3 - \frac{3}{4}y^4\right)^2 &= \left(\frac{2}{3}x^3\right)^2 - 2 \cdot \frac{2}{3}x^3 \cdot \frac{3}{4}y^4 + \left(\frac{3}{4}y^4\right)^2 = \\
 &= \frac{2^2}{3^2}(x^3)^2 - 2 \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot x^3 \cdot y^4 + \frac{3^2}{4^2}(y^4)^2 = \quad \rightarrow 2 \cdot \frac{2}{3} \cdot \frac{3}{4} = \frac{2 \cdot 2 \cdot 3}{3 \cdot 4} = 1 \\
 &= \frac{4}{9}x^{3 \cdot 2} - 1 \cdot x^3 y^4 + \frac{9}{16}y^{4 \cdot 2} = \\
 &= \frac{4}{9}x^6 - x^3 y^4 + \frac{9}{16}y^8
 \end{aligned}$$

Drugi i treći ispit znanja iz matematike za prvi razred gimnazije, tehničkih škola i svih ostalih škola ...

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2.

$$\begin{aligned}
 c) \quad (3x^4 + 7y^5)^2 &= (3x^4)^2 + 2 \cdot 3 \cdot x^4 \cdot 7 \cdot y^5 + (7y^5)^2 = \\
 &= 3^2 (x^4)^2 + 42x^4 y^5 + 7^2 (y^5)^2 = \\
 &= 9x^{4 \cdot 2} + 42x^4 y^5 + 49y^{5 \cdot 2} = \\
 &= 9x^8 + 42x^4 y^5 + 49y^{10}
 \end{aligned}$$

$$\begin{aligned}
 d) \quad 2(x-1)^2 - 3(2x+3)^2 &= 2 \cdot (x^2 - 2 \cdot x \cdot 1 + 1^2) - 3 \cdot ((2x)^2 + 2 \cdot 2x \cdot 3 + 3^2) = \\
 &= 2 \cdot (x^2 - 2x + 1) - 3 \cdot (4x^2 + 12x + 9) = \\
 &= 2 \cdot x^2 - 2 \cdot 2x + 2 \cdot 1 - 3 \cdot 4x^2 - 3 \cdot 12x - 3 \cdot 9 = \\
 &= 2x^2 - 4x + 2 - 12x^2 - 36x - 27 = \\
 &= 2x^2 - 12x^2 - 4x - 36x + 2 - 27 = \\
 &= -10x^2 - 40x - 25
 \end{aligned}$$

3.

$$\begin{aligned}
 a) \quad \left(\frac{2}{3}x^2 - 5y^4z^5\right)\left(\frac{2}{3}x^2 + 5y^4z^5\right) &= \left(\frac{2}{3}x^2\right)^2 - (5y^4z^5)^2 = \\
 &= \frac{2^2}{3^2} \cdot (x^2)^2 - 5^2 \cdot (y^4)^2 \cdot (z^5)^2 = \\
 &= \frac{4}{9} \cdot x^{2 \cdot 2} - 25 \cdot y^{4 \cdot 2} \cdot z^{5 \cdot 2} = \\
 &= \frac{4}{9}x^4 - 25y^8z^{10}
 \end{aligned}$$

$$\begin{aligned}
 b) \quad (3x + y - z)(3x - y + z) &= [3x + (y - z)] \cdot [3x - (y - z)] = \\
 &= (3x)^2 - (y - z)^2 = \\
 &= 3^2 \cdot x^2 - (y^2 - 2yz + z^2) = \\
 &= 9x^2 - y^2 + 2yz - z^2 = \\
 &= 9x^2 - y^2 - z^2 + 2yz
 \end{aligned}$$

$$\begin{aligned}
 c) \quad (x-1)(x+1) - (x+2)^2 &= x^2 - 1^2 - (x^2 + 2 \cdot x \cdot 2 + 2^2) = \\
 &= x^2 - 1 - x^2 - 4x - 4 = \\
 &= x^2 - x^2 - 4x - 1 - 4 = \\
 &= -4x - 5
 \end{aligned}$$

4. Koristimo se formulama za:

kub zbroja

i

kub razlike

$$(A+B)^3 = A^3 + 3A^2B + 3AB^2 + B^3$$

$$(A-B)^3 = A^3 - 3A^2B + 3AB^2 - B^3$$

$$(A-B)^3 = A^3 - 3 \cdot A^2 \cdot B + 3 \cdot A \cdot B^2 - B^3$$

$$\begin{array}{ccccccc} \uparrow & \uparrow & \downarrow & \downarrow & \downarrow & \downarrow & \\ & & & & & & \end{array}$$

$$\begin{aligned} a) \quad (3x-5y)^3 &= (3x)^3 - 3 \cdot (3x)^2 \cdot 5y + 3 \cdot 3x \cdot (5y)^2 - (5y)^3 = \\ &= 3^3 \cdot x^3 - 3 \cdot 3^2 \cdot x^2 \cdot 5 \cdot y + 9 \cdot x \cdot 5^2 \cdot y^2 - 5^3 \cdot y^3 = \\ &= 27x^3 - 3 \cdot 9 \cdot 5 \cdot x^2 \cdot y + 9 \cdot 25 \cdot x \cdot y^2 - 125y^3 = \\ &= 27x^3 - 135x^2y + 225xy^2 - 125y^3 \end{aligned}$$

$$\begin{aligned} b) \quad (x^4y^2 - z^3)^3 &= (x^4y^2)^3 - 3 \cdot (x^4y^2)^2 \cdot z^3 + 3 \cdot x^4y^2 \cdot (z^3)^2 - (z^3)^3 = \\ &= (x^4)^3 \cdot (y^2)^3 - 3 \cdot (x^4)^2 \cdot (y^2)^2 \cdot z^3 + 3 \cdot x^4 \cdot y^2 \cdot z^{3 \cdot 2} - z^{3 \cdot 3} = \\ &= x^{4 \cdot 3} \cdot y^{2 \cdot 3} - 3 \cdot x^{4 \cdot 2} \cdot y^{2 \cdot 2} \cdot z^3 + 3x^4y^2z^6 - z^9 = \\ &= x^{12}y^6 - 3x^8y^4z^3 + 3x^4y^2z^6 - z^9 \end{aligned}$$

5.

$$a) \quad 25x^2 - 49y^2 = 5^2 \cdot x^2 - 7^2 \cdot y^2 = (5x)^2 - (7y)^2 = (5x-7y)(5x+7y)$$

$$b) \quad 1.44x^2 - \frac{36}{169}y^2 = 1.2^2 \cdot x^2 - \frac{6^2}{13^2} \cdot y^2 = (1.2x)^2 - \left(\frac{6}{13}y\right)^2 = \left(1.2x - \frac{6}{13}y\right) \left(1.2x + \frac{6}{13}y\right)$$

ili ovako:

$$\begin{aligned} 1.44x^2 - \frac{36}{169}y^2 &= 1.2^2 \cdot x^2 - \frac{6^2}{13^2} \cdot y^2 = (1.2x)^2 - \left(\frac{6}{13}y\right)^2 = \left(\frac{12}{10}x\right)^2 - \left(\frac{6}{13}y\right)^2 = \\ &= \left(\frac{6}{5}x\right)^2 - \left(\frac{6}{13}y\right)^2 = \left(\frac{6}{5}x - \frac{6}{13}y\right) \left(\frac{6}{5}x + \frac{6}{13}y\right) \end{aligned}$$

6.

$$\begin{aligned}
 a) \quad x^6 - 2x^3y^2 + y^4 &= x^{3 \cdot 2} - 2 \cdot x^3 \cdot y^2 + y^{2 \cdot 2} = && \rightarrow x^6 = x^{3 \cdot 2} = (x^3)^2, \quad y^4 = y^{2 \cdot 2} = (y^2)^2 \\
 &\downarrow \qquad \qquad \qquad \downarrow \\
 &= (x^3)^2 - 2 \cdot x^3 \cdot y^2 + (y^2)^2 = \\
 &\downarrow \\
 &= (x^3 - y^2)^2
 \end{aligned}$$

Još jednom isti zadatak :

$$\begin{aligned}
 x^6 - 2x^3y^2 + y^4 &= x^{3 \cdot 2} - 2 \cdot x^3 \cdot y^2 + y^{2 \cdot 2} = (x^3)^2 - 2 \cdot x^3 \cdot y^2 + (y^2)^2 = (x^3 - y^2)^2 \\
 &\qquad \qquad \qquad \downarrow \qquad \downarrow \qquad \downarrow \qquad \uparrow \quad \uparrow \\
 &\qquad \qquad \qquad A^2 - 2 \cdot A \cdot B + B^2 = (A - B)^2
 \end{aligned}$$

$$\begin{aligned}
 b) \quad 20xy - 4x^2 - 25y^2 &= -4x^2 + 20xy - 25y^2 = \\
 &= -1 \cdot (4x^2 - 20xy + 25y^2) = \\
 &= -1 \cdot (2^2 \cdot x^2 - 2 \cdot 2 \cdot 5 \cdot x \cdot y + 5^2 \cdot y^2) = \\
 &= -1 \cdot ((2x)^2 - 2 \cdot 2x \cdot 5y + (5y)^2) = \\
 &= -1 \cdot (2x - 5y)^2
 \end{aligned}$$

7.

$$\begin{aligned}
 a) \quad a^7b^4 + a^5b^3 - a^4b^2 &= a^4 \cdot a^3 \cdot b^2 \cdot b^2 + a^4 \cdot a^1 \cdot b^2 \cdot b^1 - a^4 \cdot b^2 \cdot 1 = \\
 &= \underline{a^4} \cdot \underline{a^3} \cdot \underline{b^2} \cdot \underline{b^2} + \underline{a^4} \cdot \underline{a^1} \cdot \underline{b^2} \cdot \underline{b^1} - \underline{a^4} \cdot \underline{b^2} \cdot 1 = \\
 &= a^4 \cdot b^2 \cdot (a^3 \cdot b^2 + a^1 \cdot b^1 - 1) = \\
 &= a^4b^2(a^3b^2 + ab - 1)
 \end{aligned}$$

$$\begin{aligned}
 b) \quad x^3y - 6x^2y^2 + 9xy^3 &= \underline{x} \cdot \underline{x^2} \cdot \underline{y} - 6 \cdot \underline{x} \cdot \underline{x} \cdot \underline{y} \cdot \underline{y} + 9 \cdot \underline{x} \cdot \underline{y} \cdot \underline{y^2} = \\
 &= x \cdot y \cdot (x^2 - 6xy + 9y^2) = \\
 &= x \cdot y \cdot (x^2 - 6xy + 9y^2) = \\
 &= xy \cdot (x^2 - 2 \cdot x \cdot 3y + (3y)^2) = \\
 &= xy \cdot (x - 3y)^2
 \end{aligned}$$

8.

$$a) \quad x(y-1) - y + 1 = x \cdot (y-1) - 1 \cdot (y-1) = \\ = (y-1)(x-1)$$

$$b) \quad a^3 b^2 (c-d) + a^2 b (d-c) = a^2 \cdot a^1 \cdot b \cdot b (c-d) + a^2 \cdot b \cdot \underbrace{(-c+d)}_{=-1 \cdot (c-d)} = \\ = \underline{a^2} \cdot \underline{a} \cdot \underline{b} \cdot \underline{b} (c-d) + \underline{a^2} \cdot \underline{b} (-1) (c-d) = \\ = a^2 b (c-d) (ab-1)$$

9.

$$a) \quad (x+3y)^2 - 12xy = x^2 + 2 \cdot x \cdot 3y + (3y)^2 - 12xy = \quad \text{kvadriramo prvu zagradu} \\ = x^2 + 6xy - 12xy + 9y^2 = \quad \text{grupiramo} \\ = x^2 - 6xy + 9y^2 = \\ = x^2 - 2 \cdot x \cdot 3y + (3y)^2 = \quad \text{treba prepoznati kvadrat razlike} \quad (a-b)^2 \\ = (x-3y)^2$$

10.

$$a) \quad (1-x)(5x+2) + (x-1)(2x+3) = (1-x)(5x+2) + (-1+x)(2x+3) = \\ = (1-x)(5x+2) - 1(1-x)(2x+3) = \\ = \underline{(1-x)}(5x+2) - \underline{1(1-x)}(2x+3) = \quad \text{podcrtamo zajednički faktor} \\ = (1-x)[5x+2 - 1 \cdot (2x+3)] = \quad \text{izlučimo Z.F.} \\ = (1-x)(5x+2-2x-3) = \\ = (1-x)(3x-1)$$

11.

$$a) \quad (1-2x)(3-x) - (2x+3)(2x-1) - 1 + 2x = \\ = (1-2x)(3-x) - (2x+3) \cdot (-1) \cdot (1-2x) - 1 \cdot (1-2x) = \\ = \underline{(1-2x)}(3-x) + (2x+3)\underline{(1-2x)} - \underline{1(1-2x)} = \quad \text{podcrtamo zajednički faktor} \\ = (1-2x) \cdot (3-x+2x+3-1) = \quad \text{izlučimo Z.F.} \\ = (1-2x) \cdot (-x+2x+3+3-1) = \\ = (1-2x)(x+5)$$

12.

$$\begin{aligned}
 a) \quad ac - bc - a + b &= c(a - b) - 1(a - b) = \\
 &= c\underline{(a - b)} - 1\underline{(a - b)} = && \text{podcrtamo zajednički faktor, izlučimo Z.F.} \\
 &= (a - b)(c - 1)
 \end{aligned}$$

13.

$$\begin{aligned}
 a) \quad x^3 - 2x^2 + 3xy^2 - 6y^2 &= x \cdot \underline{x^2} - 2 \cdot \underline{x^2} + 3 \cdot x \cdot \underline{y^2} - 2 \cdot 3 \underline{y^2} = \\
 &= x^2 \cdot (x - 2) + 3y^2 \cdot (x - 2) = \\
 &= x^2 \cdot \underline{(x - 2)} + 3y^2 \cdot \underline{(x - 2)} = && \text{podcrtamo zajednički faktor} \\
 &= (x - 2) \cdot (x^2 + 3y^2) && \text{izlučimo Z.F.}
 \end{aligned}$$

14.

$$\begin{aligned}
 a) \quad x^2y^3 - xy^2z - z^2xy - z^3 &= \underline{x} \cdot \underline{x} \cdot \underline{y^2} \cdot y^1 - \underline{x} \cdot \underline{y^2} \cdot z - \underline{z^2} \cdot x \cdot y - \underline{z^2} \cdot z^1 = \\
 &= xy^2(xy^1 - z) - z^2 \cdot (xy - z^1) = \\
 &= xy^2 \underline{(xy - z)} - z^2 \cdot \underline{(xy - z)} = \\
 &= (xy - z)(xy^2 - z^2)
 \end{aligned}$$

15.

$$\begin{aligned}
 a) \quad x^4(3 - y) - y^2(3 - y) &= x^4 \underline{(3 - y)} - y^2 \underline{(3 - y)} = \\
 &= (3 - y)(x^4 - y^2) = \\
 &= (3 - y)((x^2)^2 - y^2) = && \text{prepoznaj: } a^2 - b^2 \\
 &= (3 - y)(x^2 - y)(x^2 + y)
 \end{aligned}$$

16.

$$\begin{aligned}
 a) \quad a^3 - a^2b - ab^2 + b^3 &= \underline{a^2} \cdot a - \underline{a^2} \cdot b - a \cdot \underline{b^2} + \underline{b^2} \cdot b = \\
 &= a^2(a - b) - b^2(a - b) = \\
 &= (a - b)(a^2 - b^2) = \\
 &= (a - b)(a - b)(a + b) = \\
 &= (a - b)^2 \cdot (a + b)
 \end{aligned}$$



17.

$$\begin{aligned} a) \quad 27x^3 - 125y^3 &= 3^3 x^3 - 5^3 y^3 = (3x)^3 - (5y)^3 = (3x - 5y) \left[ (3x)^2 + 3x \cdot 5y + (5y)^2 \right] = \\ &= (3x - 5y)(9x^2 + 15xy + 25y^2) \end{aligned}$$

$$\begin{aligned} b) \quad (x+3)^3 - (x-1)^3 &= [x+3 - (x-1)] \cdot [(x+3)^2 + (x+3)(x-1) + (x-1)^2] = \\ &= (x+3 - x+1)(x^2 + 6x + 9 + x^2 - x + 3x - 3 + x^2 - 2x + 1) = \\ &= 4 \cdot (x^2 + x^2 + x^2 + 6x - x + 3x - 2x + 9 - 3 + 1) = \\ &= 4 \cdot (3x^2 + 6x + 7) \end{aligned}$$

18) a)

$$2x^2 - 5x + 2 = \left. \begin{array}{l} a = 2 \\ b = -5 \\ c = 2 \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = b \\ m \cdot n = a \cdot c \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = -5 \\ m \cdot n = 2 \cdot 2 \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = -5 \\ m \cdot n = 4 \end{array} \right\} \Rightarrow m = -4, n = -1$$

$$m = -4, \quad n = -1$$

$$\begin{aligned} 2x^2 - 5x + 2 &= 2x^2 - 4x - 1x + 2 = \\ &= 2x(x-2) - 1(x-2) = \\ &= 2x(\underline{x-2}) - 1(\underline{x-2}) = \\ &= (x-2)(2x-1) \end{aligned}$$

18.

$$b) \quad x^2 + 13x + 12 = \left. \begin{array}{l} a = 1 \\ b = 13 \\ c = 12 \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = b \\ m \cdot n = a \cdot c \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = 13 \\ m \cdot n = 1 \cdot 12 \end{array} \right\} \Rightarrow \left. \begin{array}{l} m+n = 13 \\ m \cdot n = 12 \end{array} \right\} \Rightarrow m = 12, n = 1$$

$$m = 12, \quad n = 1$$

$$\begin{aligned} x^2 + 13x + 12 &= x^2 + 12x + 1x + 12 = \\ &= x(x+12) + 1(x+12) = \\ &= x(\underline{x+12}) + 1(\underline{x+12}) = \\ &= (x+12)(x+1) \end{aligned}$$

19.

$$\begin{aligned}
 a) \quad a^3 - 9a^2 + 27a - 27 &= a^3 - 3 \cdot 3 \cdot a^2 + 3 \cdot 9 \cdot a - 3^3 = \\
 &= a^3 - 3 \cdot a^2 \cdot a + 3 \cdot a \cdot 3^2 - 3^3 = (a-3)^3 \\
 &\quad \downarrow \quad \downarrow \downarrow \quad \downarrow \downarrow \downarrow \quad \downarrow \quad \uparrow \quad \uparrow \\
 a^3 - 3 \cdot a^2 \cdot b + 3 \cdot a \cdot b^2 - b^3 &= (a-b)^3
 \end{aligned}$$

ili drugi način:

$$\begin{aligned}
 a^3 - 9a^2 + 27a - 27 &= a^3 - 9a^2 + 27a - 3^3 = \\
 &= a^3 - 3^3 - 9 \cdot a \cdot a + 3 \cdot 9 \cdot a = \\
 &= (a-3) \cdot (a^2 + a \cdot 3 + 3^2) - 9a \cdot (a-3) = \\
 &= (a-3) \cdot (a^2 + 3a + 9 - 9a) = \\
 &= (a-3) \cdot (a^2 + 3a - 9a + 9) = \\
 &= (a-3) \cdot (a^2 - 6a + 9) = \\
 &= (a-3)^1 \cdot (a-3)^2 = (a-3)^{1+2} = \\
 &= (a-3)^3
 \end{aligned}$$

$$\begin{aligned}
 b) \quad 27a^3b^3 - 54a^2b^2c + 36abc^2 - 8c^3 &= 3^3 \cdot a^3 \cdot b^3 - 3 \cdot 2 \cdot 9 \cdot a^2 \cdot b^2 \cdot c + 3 \cdot 3 \cdot 4 \cdot a \cdot b \cdot c^2 - 2^3 \cdot c^3 = \\
 &= (3 \cdot a \cdot b)^3 - 3 \cdot 3^2 \cdot a^2 \cdot b^2 \cdot 2 \cdot c + 3 \cdot 3 \cdot a \cdot b \cdot 2^2 \cdot c^2 - (2 \cdot c)^3 = \\
 &= (3ab)^3 - 3 \cdot (3ab)^2 \cdot 2c + 3 \cdot 3ab \cdot (2c)^2 - (2c)^3 = \\
 &= (3ab - 2c)^3
 \end{aligned}$$

ili drugi način:

$$\begin{aligned}
 27a^3b^3 - 54a^2b^2c + 36abc^2 - 8c^3 &= 3^3 \cdot a^3 \cdot b^3 - 2^3 \cdot c^3 - 3 \cdot 18 \cdot a \cdot a \cdot b \cdot b \cdot c + 2 \cdot 18 \cdot a \cdot b \cdot c \cdot c = \\
 &= (3ab)^3 - (2c)^3 - 18 \cdot a \cdot b \cdot c \cdot (3 \cdot a \cdot b - 2 \cdot c) = \\
 &= (3ab - 2c) \cdot ((3ab)^2 + 3ab \cdot 2c + (2c)^2) - 18abc \cdot (3ab - 2c) = \\
 &= (3ab - 2c) \cdot (9a^2b^2 + 6abc + 4c^2 - 18abc) = \\
 &= (3ab - 2c) \cdot ((3ab)^2 - 12abc + (2c)^2) = \\
 &= (3ab - 2c) \cdot ((3ab)^2 - 2 \cdot 3ab \cdot 2c + (2c)^2) = \\
 &= (3ab - 2c)^1 \cdot (3ab - 2c)^2 = \\
 &= (3ab - 2c)^{1+2} = (3ab - 2c)^3
 \end{aligned}$$

**Kompletna rješenja sa postupkom video snimke detaljnih objašnjenja  
većine ovih zadataka nalaze se na:**

<http://www.mim-sraga.com/Mat-1--nasa/drugi-i-treci-ispit-znanja-ALGEBARSKI-test-br-2-3.htm>

**AKO IMATE PROBLEMA SA RJEŠAVANJEM ZADATAKA i PRAĆENJEM NASTAVE  
OVO NAŠA KNJIGA JE NAPISANA BAŠ ZA VAS:**



**UNIVERZALNA ZBIRKA POTPUNO RIJEŠENIH ZADATAKA ZA PRVI RAZRED**  
SKUP REALNIH BROJEVA  
POTENCIJE  
ALGEBARSKI IZRAZI  
ALGEBARSKI RAZLOMCI

**Priručnik za samostalno učenje:**  
za gimnazije , za tehničke škole  
i za sve ostale škole

<http://www.mim-sraga.com/Zbirka-potpuno-rijesenih-zad-Mat-1-ALG-RAZL.htm>



Svi zadaci su kompletno riješeni tehnikom korak po korak uz kompletne upute i objašnjenja ...

**Kupnjom zbirke dobijete potpunu garanciju** da je to to što ste tražili i imate 24 sata na dan potpunu online podršku !!! Dakle možete postavljati dodatna pitanja putem telefona ili maila ... i odgovore na sva vaša pitanja dobiti ćete putem maila ili telefona ili preko YouTube video snimaka ...

više o tome imate [ovdje !](#)

Novo **MALA ŠKOLA MATEMATIKE 1** na



**BESPLATNA video poduka i instrukcije**

UČIMO ZAJEDNO

**POTENCIJE**

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link: <http://www.mim-sraga.com/Mala-skola-matematike--video.htm>