

# MATEMATIKA

## M-S-01

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1.  $4a^2 + 2$
2.  $x^{\frac{1}{4}} - 3$
3.  $y = -\frac{4}{3}x$
- 4.
5.  $a = \pm \frac{1}{\sqrt{2}}$
6.  $x \in \{2,3,4\}$
7.  $S = 6$
8.  $x = a; y = 0$
9.  $0$
10.  $V = 512cm^3$

## M-S-02

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- 1.
2.  $11a(x - 3y)^2$
3.  $50x^2 + 35x + 6$
4.  $1$
5.  $1; 7; 13; 19; 25$
6.  $y = 4$
7.  $(x - 15)^2 + (y + 20)^2 = 225$
8. a) b)
9.  $x = 2$
10.  $P = 2350cm^2$

## M-S-03

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1.  $\frac{a}{b}$
- 2.
3.  $x = 10; x = 0,001$
4. 1
5.  $y = -\frac{3}{8}(x-3)$
6.  $a = \frac{39}{15}; q = 2 \quad a = -\frac{39}{5}; q = -2$
- 7.
8.  $x = 1$
9.  $\operatorname{Re}\left(\frac{32+i\sqrt{5}}{1+2i\sqrt{5}}\right)=2; \operatorname{Im}\left(\frac{32+i\sqrt{5}}{1+2i\sqrt{5}}\right)=-3\sqrt{5}$
10.  $x = 2\sqrt{5}cm$

## M-S-04

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1.  $\sqrt[3]{a} - \sqrt[3]{b}$
2.  $\frac{2-m}{m(2+m)}$
3.  $x \geq -\frac{43}{7}$
4. 2
5.  $x_1 = \frac{-3+i\sqrt{51}}{2}, x_2 = \frac{-3-i\sqrt{51}}{2}$
6.  $A \times B = \{(-2,-1), (-2,0), (-2,1), (-1,-1), (-1,0), (-1,1), (0,-1), (0,0), (0,1)\}$   
 $B \times A = \{(-1,-2), (-1,-1), (-1,0), (0,-2), (0,-1), (0,0), (1,-2), (1,-1), (1,0)\}$   
 $A^2 = \{(-2,-2), (-2,-1), (-2,0), (-1,-2), (-1,-1), (-1,0), (0,-2), (0,-1), (0,0)\}$   
 $B^2 = \{(-1,-1), (-1,0), (-1,1), (0,-1), (0,0), (0,1), (1,-1), (1,0), (1,1)\}$
7.  $8 \log_7 x - \log_7 2 + \frac{4}{5} \log_7 (x-5) - \frac{1}{5} \log_7 (x^2+1)$
8.  $-2x^5 + 3x^4 + 8x^3 - 16x^2 + 6x$
9.  $\frac{x}{-6} + \frac{y}{-8} = 1$
10.  $25:9; 125:27$

## M-S-05

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1.  $\frac{1}{6}(x-5)(x+1)$
2. 1
3.  $\frac{5(3-\sqrt{2})}{7}$
4.  $x_T = \frac{3}{2}, y_T = -\frac{1}{4}$  ili  $T\left(\frac{3}{2}, -\frac{1}{4}\right)_{\min}$
5.  $x_1 = 5; x_{2,3} = \frac{5}{2}(-1 \pm i\sqrt{3})$
6.  $h = 26\text{cm}$
7. 6
8.  $A \setminus B = \{2, 8\}; B \setminus A = \emptyset$
9.  $T(6; -4, 5)$
10.  $x = -1; y = -4$ . NE

## M-S-06

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1. 1
2.  $\frac{1}{9}$
3.  $b = 1; x_1 = 4, x_2 = -5$
4.  $\frac{5}{-13-i}$
5.  $x = 1$
6.  $P_1 = 150\text{cm}^2$ ; za 562,5‰ više.  
 $V_1 = 125\text{cm}^3$ ; za 953,125‰ više.
7.  $y = x + 2$
8.  $a_1 = 1, a_2 = 3, a_3 = 9, a_4 = 27$
9.  $A \cap B = \{5, 7\} = B$ , b)  $A \setminus B = \{1, 3\}$
10. R: (5,3)

## M-S-07

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1.  $\frac{x-6}{(x+1)(x+6)}$  .

2. 36

3.  $-2-i$  .

4.  $x_{1,2} = \pm 5; \quad x_{3,4} = \pm 5i$

5.  $y = \left(x - \frac{3}{2}\right)^2 - \frac{1}{4}$

6.  $a = 6cm$

7.  $x = \frac{\pi}{6} + 2k\pi, \quad k \in Z$

$x = \frac{5\pi}{6} + 2k\pi, \quad k \in Z$

8.  $x = 2$

9.  $a_n = a_1 + (n-1)d$

$n = 700$

10. a)  $A \cup B = \{1, 3, 5, 7\} = A$ , b)  $B \setminus A = \emptyset$

## M-S-08

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1.  $x-1$

2. 120

3.  $-\frac{9}{31}(\sqrt{5}+6)$

4.  $x^2 - 2x + 10 = 0$

5.  $x = 4$

6.  $P = 150cm^2; \quad P_1 = 600cm^2; 4$  puta

7.  $a_1 = \frac{1}{2}, \quad a_2 = \frac{1}{2}, \quad a_3 = \frac{3}{8}, \quad a_4 = \frac{1}{4}, \quad a_5 = \frac{5}{32}$

8.  $y = \sqrt{3}x + 2 - \sqrt{3}$

9. a)  $A \cup B = \{2, 4, 6, 8\} = A$ , b)  $A \cap B = \{6, 8\} = B$

10.  $x = 1, \quad y = 2$

$k = -3$