

SHEMA ZA BODOVANJE

STRUČNI ISPIT, **MATEMATIKA**

17. 08. 2017.

Rješenja zadatka višestrukog izbora

Broj zadatka	Tačna alternativa
1.	C
2.	B
3.	C
4.	D
5.	A
6.	B
7.	A
8.	D

9. Ukupno 3 boda

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2) \dots\dots\dots 1 \text{ bod}$$

$$\frac{x^3 - y^3}{x - y} + xy = \frac{(x - y)(x^2 + xy + y^2)}{x - y} + xy = (x + y)^2 \dots\dots\dots 1 \text{ bod}$$

$$\left(\frac{x - y}{(x - y) \cdot (x + y)} \right)^2 \cdot (x + y)^2 = 1 \dots\dots\dots 1 \text{ bod}$$

10. Ukupno 3 boda

$$AN - 5000, PL - 3000, BE - 34000, \text{ ukupno} - 620000 \text{ ili } AN + PL + BE = 42\,000 \dots\dots\dots 1 \text{ bod}$$

$$620000 : 42000 = 100 : p \dots\dots\dots 1 \text{ bod}$$

$$p = 6,8\% \dots\dots\dots 1 \text{ bod}$$

11. Ukupno 3 boda

$$x = 2 \Rightarrow 4m + 2m + 8 + 3n - 2 = 0 \quad \text{ili} \quad -\frac{m + 4}{m} = 0 \dots\dots\dots 1 \text{ bod}$$

$$x = -2 \Rightarrow 4m - 2m - 8 + 3n - 2 = 0 \quad \frac{3n - 2}{m} = -4$$

$$m = -4 \dots\dots\dots 1 \text{ bod}$$

$$n = 6 \dots\dots\dots 1 \text{ bod}$$

12. Ukupno 2 boda

$$6x = 2(x - 6) + 30 \dots\dots\dots 1 \text{ bod}$$

$$x = \frac{9}{2} \dots\dots\dots 1 \text{ bod}$$

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13. Ukupno 3 boda

$5x - 3 > 9x - 4 \Rightarrow -4x > -1 \Rightarrow x < \frac{1}{4}$ 1 bod

$x\left(-x + \frac{1}{2}\right) > 0$ ili  1 bod

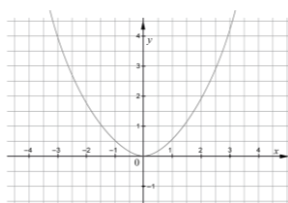
$\left(0, \frac{1}{2}\right) \cap \left(-\infty, \frac{1}{4}\right) = \left(0, \frac{1}{4}\right)$ 1 bod

14. Ukupno 3 boda

a) Skiciran grafik parabole koji ima minimum tj. nulu u tački (0, 0) 1 bod

Nacrtan grafik tražene funkcije tako da se nedvosmisleno uočavaju vrijednosti koje

funkcije uzima za $x = \pm 1, x = \pm 2$ 1 bod



b) $y > 0$ za svako $x \in (-\infty, 0) \cup (0, +\infty)$ 1 bod

c) $f\left(-\frac{1}{2}\right) = \frac{1}{8}$ 1 bod

15. Ukupno 2 boda

$4 - 3x = 0$ 1 bod

$x = \frac{4}{3}$ 1 bod

16. Ukupno 3 boda

C_1 - podnožje visine iz tačke C

$\operatorname{tg} 30^\circ = \frac{AC_1}{20}$ 1 bod

$\operatorname{tg} 45^\circ = \frac{C_1B}{20}$ 1 bod

$AC_1 + C_1B = 20 \frac{\sqrt{3}}{3} + 20 = 20 \left(\frac{\sqrt{3}}{3} + 1 \right)$ 1 bod

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17. Ukupno 4 boda

$$\begin{cases} x - y = 6 \\ 6x^2 - 6y^2 = 576 \end{cases} \dots\dots\dots 1 \text{ bod}$$

Transformacija sistema npr. metodom zamjene 1 bod

$$x = 11, y = 5 \dots\dots\dots 1 \text{ bod}$$

$$V_1 - V_2 = 11^3 - 5^3 = 1206 \dots\dots\dots 1 \text{ bod}$$

18. Ukupno 4 boda

a) $x = 1 \wedge x^2 + y^2 = 4 \Rightarrow y^2 = 3; T_1(1, -\sqrt{3}), T_2(1, \sqrt{3}) \dots\dots\dots 1 \text{ bod}$

$$P_{\Delta} = \frac{ah_a}{2} \Rightarrow P_{\Delta} = \sqrt{3} \dots\dots\dots 1 \text{ bod}$$

b) $y = \sqrt{3}x \dots\dots\dots 1 \text{ bod}$

$$y = -\sqrt{3}x \dots\dots\dots 1 \text{ bod}$$

19. Ukupno 2 boda

$$f(-x) = -\frac{1}{x^5} - x + 5x^3 = -\left(\frac{1}{x^5} + x - 5x^3\right) = -f(x) \dots\dots\dots 1 \text{ bod}$$

Funkcija je neparna 1 bod

20. Ukupno 4 boda

$$a_1 = 100, a_n = 998, d = 2 \dots\dots\dots 1 \text{ bod}$$

$$a_n = a_1 + (n-1)d \Rightarrow 998 = 100 + (n-1) \cdot 2 \dots\dots\dots 1 \text{ bod}$$

$$n = 450 \dots\dots\dots 1 \text{ bod}$$

$$S_{450} = 450 \cdot 549 = 247050 \dots\dots\dots 1 \text{ bod}$$