

SHEMA ZA BODOVANJE

STRUČNI ISPIT, MATEMATIKA

13. AVGUST 2020. GODINA

Rješenja zadataka višestrukog izbora

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

9. Ukupno 3 boda

a) $3x^3 - 13x^2 + 4x$ 1 bod

b) $3 \cdot 10^7$ 1 bod

c) $\frac{1}{a^2} - \frac{1}{a(a-1)} = -\frac{1}{a^2(a-1)}$ 1 bod

10. Ukupno 2 boda

$C : P : \check{Z} : Z = 4 : 7 : 3 : 1$, $C = 4k$, $P = 7k$, $\check{Z} = 3k$, $Z = k$ 1 bod

$3k = 4k - 20$, $k = 20$, $P = 140$ 1 bod

11. Ukupno 4 boda

$f(a) = 0 \Rightarrow -2 \cdot a^2 + 200 \cdot a = 0$ 1 bod

$2a(-a + 100) = 0 \Rightarrow a = 0 \vee a = 100$ 1 bod

$T\left(-\frac{b}{2a}, -\frac{D}{4a}\right)$, $y_{\max} = -\frac{D}{4a}$ 1 bod

$y_{\max} = 5000$ 1 bod

12. Ukupno 3 boda

$f(x) = 2^{x-1} - 2^2$ 1 bod

$f(x) > 0 \Rightarrow 2^{x-1} > 2^2 \Rightarrow x > 3$ 1 bod

$f(x) < 0 \Rightarrow 2^{x-1} < 2^2 \Rightarrow x < 3$ 1 bod

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13. Ukupno 3 boda

- a) $x = 8$ 1 bod
- b) $x^{\frac{1}{2}} = 10^{\frac{1}{2}} \Rightarrow x = 10$ 1 bod
- c) $x = 5$ 1 bod

14. Ukupno 3 boda

- a) 210° 1 bod
- b) $\operatorname{ctg} \frac{2\pi}{3} = \operatorname{ctg} \left(\pi - \frac{\pi}{3} \right) = -\operatorname{ctg} \frac{\pi}{3} = -\frac{\sqrt{3}}{3}$ 1 bod
- c) $f \left(\frac{5\pi}{6} \right) = \sin 3 \frac{5\pi}{6} = \sin \frac{5\pi}{2} = 1$ 1 bod

15. Ukupno 3 boda

- $V_1 = 640 \text{ cm}^3$ 1 bod
- $V_2 = 640 \text{ cm}^3 \Rightarrow 640 = a^2 \cdot 10$ 1 bod
- $a = 8 \text{ cm}$ 1 bod

16. Ukupno 3 boda

- $a_1 = 3 \text{ cm}$ 1 bod
- Zaključak da se traži zapremina zarubljene piramide (sa podacima uvrštenim u formulu)
..... 1 bod
- $V_{\text{traženo}} = 84 \text{ cm}^3$ 1 bod

17. Ukupno 3 boda

- $(2 - 2m)x + y - 2 = 0 \Rightarrow k = 2m - 2$ 1 bod
- $x + 2y + 2 = 0 \Rightarrow k_1 = -\frac{1}{2}$ 1 bod
- $k \cdot k_1 = -1 \Rightarrow 2m - 2 = 2 \Rightarrow m = 2$ 1 bod

18. Ukupno 3 boda

- $a = 4$ i $c = 3$ 1 bod
- $c^2 = a^2 - b^2 \Rightarrow b^2 = 7$ 1 bod
- $\frac{x^2}{16} + \frac{y^2}{7} = 1$ 1 bod

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19. Ukupno 3 boda

$$b_n = b_1 \cdot q^{n-1}, \frac{1}{256} = 64 \cdot \left(\frac{1}{4}\right)^{n-1} \dots\dots\dots 1 \text{ bod}$$

$$\frac{1}{4^7} = \left(\frac{1}{4}\right)^{n-1} \dots\dots\dots 1 \text{ bod}$$

$$7 = n - 1 \Rightarrow n = 8 \dots\dots\dots 1 \text{ bod}$$

20. Ukupno 3 boda

$$x \geq 0 \dots\dots\dots 1 \text{ bod}$$

$$1 - \sqrt{x} \neq 0 \Rightarrow \sqrt{x} \neq 1 \Rightarrow x \neq 1 \dots\dots\dots 1 \text{ bod}$$

$$x \in [0, 1) \cup (1, +\infty) \dots\dots\dots 1 \text{ bod}$$