SHEMA ZA BODOVANJE

STRUČNI ISPIT, **MATEMATIKA**

01. 06. 2019.

Rješenja zadataka višestrukog izbora

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

9. Ukupno 3 boda

$x^3\left(x^2-1\right)-\left(x^2-1\right)$ ..... 1 bod

$\left(x^3-1\right)\left(x-1\right)\left(x+1\right)$ ..... 1 bod

$(x-1)^2(x+1)\left(x^2+x+1\right)$ ..... 1 bod

10. Ukupno 3 boda

$x=\frac{5y}{3}$ ili $y=\frac{3x}{5}$ ..... 1 bod

$x=10$ ..... 1 bod

$y=6$ ..... 1 bod

11. Ukupno 3 boda

$3\left(x-2\right)+\left(x+2\right)=x^2-4,\ x\neq\pm2$ ..... 1 bod

$x^2-4x=0$ ..... 1 bod

$x=0\vee x=4$ ..... 1 bod

12. Ukupno 3 boda

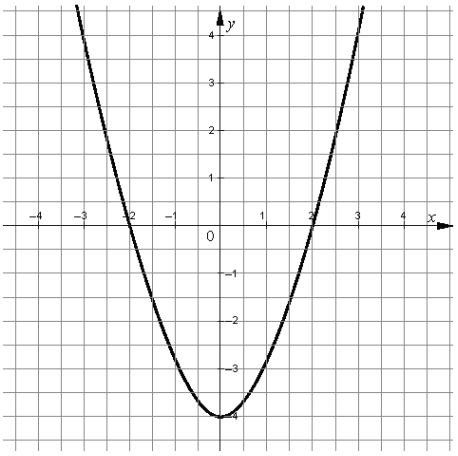
$x_1+x_2=-\left(2k-1\right),\quad x_1\cdot x_2=5$ ..... 1 bod

$\frac{1-2k}{5}=3$ ..... 1 bod

$k=-7$ ..... 1 bod

13. Ukupno 3 boda

a)



..... 1 bod

b) $f(x)>0$ za $x\in(-\infty,-2)\cup(2,+\infty)$, $f(x)<0$ za $x\in(-2,2)$ ..... 1 bod

c) $f(x)$ je opadajuća u $(-\infty,0)$ i rastuća u $(0,+\infty)$ ..... 1 bod

14. Ukupno 3 boda

$\left(4^{\frac{1}{3}}\right)\left(4^{\frac{2}{3}}\right)^4=4^{\frac{1}{3}}\cdot 4^{\frac{8}{3}}=4^3$ ili $64^{x+4}=\left(4^3\right)^{x+4}=4^{3x+12}$ ..... 1 bod

$4^3=4^{3x+12}$ ..... 1 bod

$3=3x+12\Rightarrow x=-3$ ..... 1 bod

15. Ukupno 2 boda

$\log_2 16=4\log_2 2$ ..... 1 bod

$\log_4\left(4\log_2 2\right)=\log_4 4=1$ ..... 1 bod

16. Ukupno 3 boda

a) $\cos\measuredangle CAB=\dfrac{AB}{AC}\Rightarrow\dfrac{1}{2}=\dfrac{4}{AC}\Rightarrow AC=8$ ..... 1 bod

b) $AC^2=AB^2+BC^2\Rightarrow BC=4\sqrt{3}$ ..... 1 bod

c) $\measuredangle BCA=30^o$, $\measuredangle CAB=60^o$, $\measuredangle ABC=90^o$ ..... 1 bod

17. Ukupno 3 boda

$2r\pi = H$ ..... 1 bod

$H = 2, \quad r = \dfrac{1}{\pi}$ ..... 1 bod

$V = BH = r^2\pi H = \dfrac{1}{\pi^2}\pi \cdot 2 = \dfrac{2}{\pi}$ ..... 1 bod

18. Ukupno 3 boda

I način

$P = \dfrac{1}{2}\left|-2(0-6)+4(6-3)+2(3-0)\right| \Rightarrow P = 15$ ..... 1 bod

$AB = 3\sqrt{5}$ ..... 1 bod

$P = \dfrac{AB \cdot h}{2} \Rightarrow h = 2\sqrt{5}$ ..... 1 bod

II način

Uvrštene koordinate tačaka A i B u formulu za jednačinu prave kroz dvije tačke

$y - 3 = \dfrac{-3}{6}(x+2)$ ..... 1 bod

$AB: x + 2y - 4 = 0$ .....1 bod

$h_c = \left|\dfrac{2 + 2 \cdot 6 - 4}{\sqrt{1+4}}\right| = 2\sqrt{5}$ .....1 bod

19. Ukupno 3 boda

$a_1 = -12, d = 9$ ..... 1 bod

$a_n = a_1 + (n-1)d \Rightarrow 159 = -12 + (n-1)\cdot 9$ ..... 1 bod

$n = 20$ ..... 1 bod

20. Ukupno 3 boda

a) $\sin x \neq 0 \Rightarrow x \neq k\pi, k \in Z$ ..... 1 bod

b) $\lim\limits_{x\to 0}\dfrac{\sin 2x}{\sin x} = \lim\limits_{x\to 0}\dfrac{2\sin x\cos x}{\sin x} = \lim\limits_{x\to 0} 2\cos x$ ..... 1 bod

$\lim\limits_{x\to 0} 2\cos x = 2$ ..... 1 bod