



MATURSKI/STRUČNI ISPIT
JUN* 2026. GODINA

MATEMATIKA (OSNOVNI NIVO)

UPUTSTVO ZA OCJENJIVANJE

Rješenja zadataka višestrukog izbora

Redni broj zadatka	Tačan odgovor
1.	A
2.	B
3.	B
4.	A
5.	C
6.	A
7.	D
8.	C

9. $8^{70} - 5 \cdot 2^{205} = 2^{205} (2^5 - 5)$ 1 bod

$27 \cdot 2^{205}$ nije djeljivo sa 81 1 bod

10.

a) $\left(\left(\frac{4}{3} \right)^{-1} + \left(\frac{1}{2} \right)^2 \right)^{2026} = \left(\frac{3}{4} + \frac{1}{4} \right)^{2026}$ 1 bod

$1^{2026} = 1$ 1 bod

b) $0,0000001 \cdot 10000 = 10^{-7} \cdot 10^4$ 1 bod

$A = 10^{-7} \cdot 10^4 \cdot 10^{33} = 10^{30}$ 1 bod

11.

$N = 88\%S$ 1 bod

$1496 = \frac{88}{100} S \Rightarrow S = 1700$ eura 1 bod

12.

a) $A(-2, 0)$ 1 bod

b) $c = -2$ 1 bod

Npr. $0 = 4a - 2 \Rightarrow a = \frac{1}{2}$ 1 bod

c) Funkcija je opadajuća za $x \in (-\infty, 0)$ i rastuća za $x \in (0, +\infty)$ 1 bod

13.

$4^x \cdot 3^x \cdot 5^x \cdot 2 \cdot 3 \cdot 5^{-2} = \frac{72}{5}$ 1 bod

$60^x = \frac{72 \cdot 25}{5 \cdot 6}$ 1 bod

$60^x = 60 \Rightarrow x = 1$ 1 bod

14.

$x > 0$ i $x - 2 > 0 \Rightarrow x \in (2, +\infty)$ 1 bod

$\log_{10} x - 2 = 0$ ili $\log_{10} (x - 2) = 0$ 1 bod

$\log_{10} x - 2 = 0 \Rightarrow \log_{10} x = 2 \Rightarrow x = 100$ 1 bod

$\log_{10} (x - 2) = 0 \Rightarrow x - 2 = 1 \Rightarrow x = 3$ 1 bod

15.

$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha}$, $\operatorname{ctg} \alpha = \frac{\cos \alpha}{\sin \alpha}$ 1 bod

$\frac{\cos \alpha}{\cos \alpha - \sin \alpha} + \frac{\sin \alpha}{\sin \alpha - \cos \alpha} =$ 1 bod

$\frac{\cos \alpha}{\cos^2 \alpha} - \frac{\sin \alpha}{\sin^2 \alpha} =$ 1 bod

$\frac{\cos^2 \alpha - \sin^2 \alpha}{\cos \alpha - \sin \alpha} = \frac{(\cos \alpha - \sin \alpha)(\cos \alpha + \sin \alpha)}{\cos \alpha - \sin \alpha} = \cos \alpha + \sin \alpha$ 1 bod

16.

$n: y = k_1 x + n_1$ – normala na pravu p

$k = \frac{1}{2} \Rightarrow k_1 = -\frac{1}{k} = -2$ 1 bod

$n: y = -2x$ 1 bod

$n \cap p: y = -2x \wedge y = \frac{1}{2}x + \frac{1}{2}$ 1 bod

$\left(-\frac{1}{5}, \frac{2}{5}\right)$ 1 bod

17.

Jednačina hiperbole: $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$; Jednačine asimptota: $y = \pm \frac{b}{a}x$

$y = \pm \frac{1}{2}x \Rightarrow a^2 = 4b^2$ 1 bod

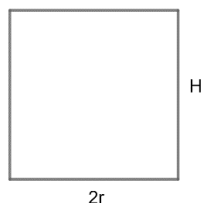
$\frac{12^2}{a^2} - \frac{(3\sqrt{3})^2}{b^2} = 1 \Rightarrow \frac{144}{a^2} - \frac{27}{b^2} = 1$ 1 bod

$\frac{144}{4b^2} - \frac{27}{b^2} = 1$ 1 bod

$b^2 = 9; a^2 = 36 \Rightarrow \frac{x^2}{36} - \frac{y^2}{9} = 1$ 1 bod

18.

H -visina valjka, r -poluprečnik valjka



Osnis presjek kvadrat $\Rightarrow H = 2r$ 1 bod

$V = r^2 \pi H \Rightarrow 2r^3 \pi = 16\pi$

$r = 2\text{cm} \Rightarrow H = 4\text{cm}$ 1 bod

19.

$f'(x) = 3px^2 + 2(1-3p)x$ 1 bod

$f''(x) = 6px + 2(1-3p)$ 1 bod

$f''(2) = -1 \Rightarrow 6p \cdot 2 + 2(1-3p) = -1 \Rightarrow p = -\frac{1}{2}$ 1 bod

20.

$\lim_{x \rightarrow 0} \frac{\sin x}{\sqrt{x+1}-1} \cdot \frac{\sqrt{x+1}+1}{\sqrt{x+1}+1}$ 1 bod

$\lim_{x \rightarrow 0} \frac{\sin x}{x} \cdot (\sqrt{x+1}+1)$ 1 bod

$= 2$ 1 bod