

**MATURSKI I STRUČNI ISPIT, ŠKOLSKA 2020/21. GODINA**
**MATEMATIKA – OSNOVNI NIVO**
**UPUTSTVO ZA OCJENJIVANJE**
**Rješenja zadataka višestrukog izbora**

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

**9.**

$$\left(1 - \frac{3-x}{x+2}\right) = \frac{x+2-3+x}{x+2} \dots\dots\dots 1 \text{ bod}$$

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

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

**10.**

$$(1+i)^8 = \left((1+i)^2\right)^4 \dots\dots\dots 1 \text{ bod}$$

$$(2i)^4 = 16 \dots\dots\dots 1 \text{ bod}$$

**11.**

$$\begin{matrix} \downarrow & 20r & 48d & \uparrow \\ & xr & 40d & \end{matrix} \dots\dots\dots 1 \text{ bod}$$

$$20 : x = 40 : 48 \dots\dots\dots 1 \text{ bod}$$

$$x = 24 \dots\dots\dots 1 \text{ bod}$$

$$\text{Broj radnika je uvećan za } 20\% \dots\dots\dots 1 \text{ bod}$$

**12.**

$x - 2 = 2x - 2$  ..... 1 bod

$x = 0$  ..... 1 bod

**13.**

$f(x) = 8x^2 - 8(3+m)x + 24m$  ..... 1 bod

$-\frac{b}{2a} = 5$  ..... 1 bod

$\frac{8(3+m)}{16} = 5 \Rightarrow m = 7$  ..... 1 bod

**14.**

a)  $y = -1$  ..... 1 bod

b) Zaključak da je funkcija  $f$  monotono opadajuća ..... 1 bod

Izračunata najmanja vrijednost  $f(-1) = 2$  ..... 1 bod

**15.**

$\text{ctg}135^\circ = -\text{ctg}45^\circ$  ..... 1 bod

$\sin 210^\circ = -\sin 30^\circ$  ..... 1 bod

$10\text{ctg}135^\circ \sin 210^\circ = 10 \cdot (-1) \cdot \left(-\frac{1}{2}\right) = 5$  ..... 1 bod

**16.**

$r = H$  ..... 1 bod

$2r\pi H = 18\pi$  ..... 1 bod

$r = 3\text{ cm}$  ..... 1 bod

$V = r^2\pi H = 27\pi\text{ cm}^3$  ..... 1 bod

**17.**

$\text{tg}\alpha = \frac{4-3}{2\sqrt{3}-\sqrt{3}} = \frac{\sqrt{3}}{3}$  ..... 1 bod

$\alpha = 30^\circ$  ..... 1 bod

**18.**

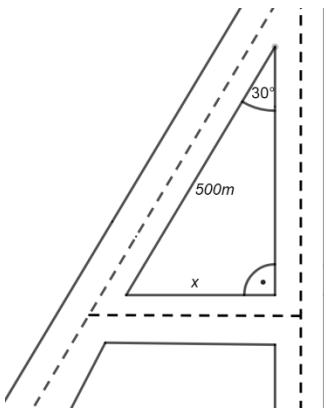
$$r = \sqrt{5} \wedge p = 1 \Rightarrow k : (x-1)^2 + (y-q)^2 = 5 \dots\dots\dots 1 \text{ bod}$$

$$A(2,1) \in k \Rightarrow (2-1)^2 + (1-q)^2 = 5 \dots\dots\dots 1 \text{ bod}$$

$$q_1 = -1, q_2 = 3 \dots\dots\dots 1 \text{ bod}$$

$$q < 0 \Rightarrow k : (x-1)^2 + (y+1)^2 = 5 \dots\dots\dots 1 \text{ bod}$$

**19.**



$$x - \text{traženo rastojanje}, \sin 30^\circ = \frac{x}{500m} \dots\dots\dots 1 \text{ bod}$$

$$\frac{1}{2} = \frac{x}{500m} \Rightarrow x = 250m \dots\dots\dots 1 \text{ bod}$$

**20.**

a)  $x \in (-2, -1) \cup (1, 2) \dots\dots\dots 1 \text{ bod}$

b) za  $x = 0, y_{\min} = -4 \dots\dots\dots 1 \text{ bod}$

c)  $x = -2, x = -1, x = 1, x = 2 \dots\dots\dots 1 \text{ bod}$