UPUTSTVO ZA OCJENJIVANJE

MATURSKI/STRUČNI ISPIT – MATEMATIKA (OSNOVNI NIVO)

II JUNSKI ROK 2022. GODINA

Rješenja zadataka višestrukog izbora

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

9.

a) $\left(3-4\cdot(-1)^{-1}\right)^{-1}=(3+4)^{-1}=\frac{1}{7}$ ..... 1 bod

b) $2^{3a}\cdot 3^{2a}=8^{a}\cdot 9^{a}=72^{a}$ ..... 1 bod

c) Cifre $2,5,8$ ili $6285,\ 6585,\ 6885$ ..... 1 bod

10.

$\frac{a^2-b^2}{ab}:\frac{a+b}{ab}$ ..... 1 bod

$=\frac{(a-b)(a+b)}{ab}\cdot\frac{ab}{a+b}=a-b$ ..... 1 bod

11.

Prvobitni broj djevojaka je: $P=\frac{60\cdot 65}{100}=39$ ..... 1 bod

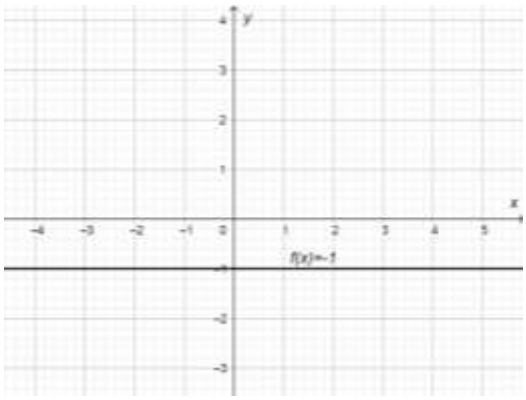
$(60+9+11):(39+9)=100:p$ ..... 1 bod

$p=\frac{100\cdot 48}{80}=60$, u ansamblu je sada 60% djevojaka ..... 1 bod

12.

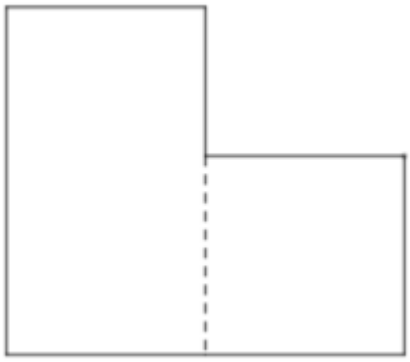
Da bi funkcija f bila konstantna treba da važi $2k+\frac{3}{2}=0$. Dobijamo $k=-\frac{3}{4}$ .... 1 bod

Tražena funkcija je $f(x)=-1$ i njen grafik je:



..... 1 bod

13.



Dijeljenjem figure na dva dijela i primjenom formula za računanje površine pravougaonika, dobija se

$x^2+x(x+3)=44$ ..... 1 bod

$2x^2+3x-44=0$ ..... 1 bod

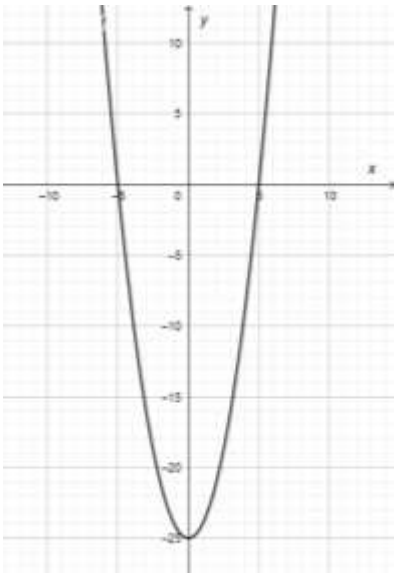
$x_1=4 \quad x_2=-\frac{11}{2}$ ..... 1 bod

Drugo rješenje ne može biti dužina stranice pa se odbacuje. Dakle, $x=4m$ ..... 1 bod

14.

$x^2-25<0 \Rightarrow (x-5)(x+5)<0$

ili



..... 1 bod

$x \in (-5,5)$ ..... 1 bod

15.

$5^{\log_5 3}=3$ ili $\log_{13}1=0$ ..... 1 bod

$\log_{\frac{1}{5}}\sqrt[4]{125}=-\frac{3}{4}$ ..... 1 bod

Krajnji rezultat $5^{\log_5 3}+\log_{13}1+\log_{\frac{1}{5}}\sqrt[4]{125}=\frac{9}{4}$ ..... 1 bod

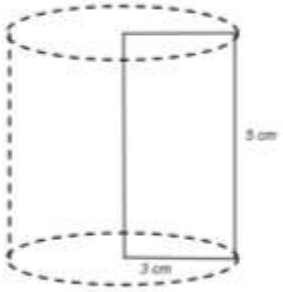
16.

$4^x \cdot 5^x \cdot 5 = 5 \cdot 20^{2-x}$ ..... 1 bod

$20^x = 20^{2-x}$ ..... 1 bod

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

17.



$\begin{cases} 2a+2b=16 \\ ab=15 \end{cases}$ ..... 1 bod

$a(8-a)=15 \Rightarrow -a^2+8a-15=0 \Rightarrow$ dimenzije pravougaonika su $3cm$ i $5cm$ .. 1 bod

$r=3cm, H=5cm$ ..... 1 bod

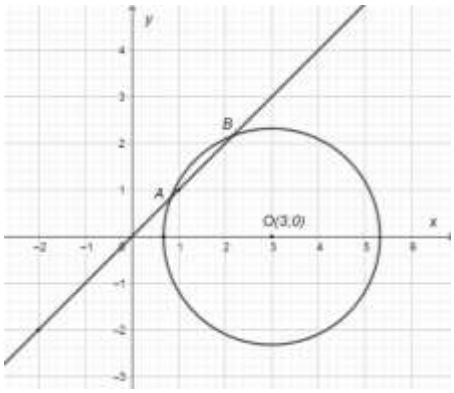
$P=2B+M=2r^2\pi+2r\pi H=48\pi cm^2$ ..... 1 bod

18.

$\frac{y_2-y_1}{x_2-x_1}=\frac{2-1}{-2-2} \Rightarrow k=-\frac{1}{4}$ ..... 1 bod

Simetrala s ima koeficijent $k_s=-\frac{1}{-\frac{1}{4}}=4$ ..... 1 bod

19.



$\begin{cases} y=x \\ x^2+y^2-6x+4=0 \end{cases}$ ..... 1 bod

$x^2+x^2-6x+4=0 \Rightarrow x^2-3x+2=0$

Tačke presjeka: $(1,1),(2,2)$ ..... 1 bod

Dužina tetive: $AB=\sqrt{(2-1)^2+(2-1)^2}=\sqrt{2}$ ..... 1 bod

20.

$$f(x)=\begin{cases}\frac{1}{8}x^2, & 0\le x<20\\ 50, & 20\le x<40\\ \frac{3}{2}x-10, & 40\le x\le 50\end{cases}$$ ..... 1 bod

$$f'(x)=\begin{cases}\frac{1}{4}x, & 0\le x<20\\ 0, & 20<x<40\\ \frac{3}{2}, & 40<x<50\end{cases}$$ ..... 1 bod

$f'(8)=\frac{1}{4}\cdot 8=2\frac{m}{s}$,

$f'(30)=0\frac{m}{s}$, ... 1 bod

$f'(45)=\frac{3}{2}\frac{m}{s}$