Numele elevului:_____

Prenumele elevului:_____

Patronimicul elevului:_____

Instituția de învățământ:_____

_____

_____

Localitatea:_____

Raionul / Municipiul:_____

MINISTERUL EDUCAŢIEI ŞI CERCETĂRII AL REPUBLICII MOLDOVA
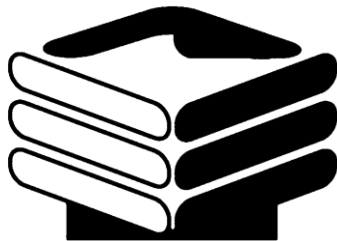
Agenţia Naţională pentru Curriculum și Evaluare

MATEMATICA (ÎN LIMBA ENGLEZĂ)

EXAMEN NAȚIONAL DE ABSOLVIRE A GIMNAZIULUI SESIUNEA DE BAZĂ

06 iunie 2024
Timp alocat – 120 de minute

Rechizite şi materiale permise: *pix cu cerneală albastră, creion, riglă, radieră.*

Instrucţiuni pentru candidat:

- Citeşte cu atenţie fiecare item şi efectuează operaţiile solicitate.
- Lucrează independent.

Îţi dorim mult succes!

Numele şi prenumele evaluatorului: _____ Punctaj total:_____

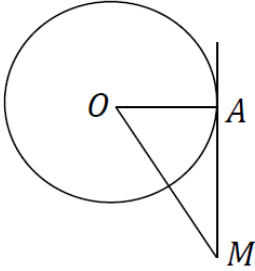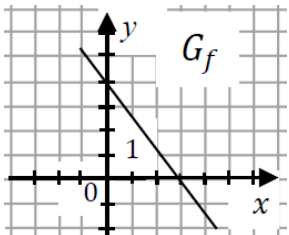## Annex

$$x^m : x^n = x^{m-n}$$
$$(x^m)^n = x^{m \cdot n}$$
$$(a + b)^2 = a^2 + 2ab + b^2$$
$$(a - b)(a + b) = a^2 - b^2$$
$$\mathcal{A}_\Delta = \frac{1}{2} a h_a$$
$$1 \, l = 1000 \text{ cm}^3$$
$$\mathcal{V}_{prism} = \mathcal{A}_b \cdot h$$

Nr.	Items	Score
1.	Let $a = \dfrac{4}{3} : \dfrac{8}{9}$ and $b = -5 + 3$. Fill in the boxes with real numbers, which represent the values of the expressions: $a = \boxed{}$, $b = \boxed{}$, $a \cdot b = \boxed{}$.	L 0 1 2 3
2.	On the picture, AM is a tangent line at the point A to the circle with the center O, such that $m(\angle AMO) = 40°$. Fill in the boxes with the measures in degrees of the angles OAM and AOM. a) $m(\angle OAM) = \boxed{}$; b) $m(\angle AOM) = \boxed{}$.	L 0 1 2
3.	On the picture, the graph of the function $\qquad f : \mathbb{R} \to \mathbb{R}, \qquad f(x) = ax + b, \qquad a \neq 0,$ is represented. Write in the box one of the symbols "<" or ">", such that the statement becomes true. $\qquad a \boxed{} 0.$	L 0 2
4.	During a day a group of tourists has to cover a distance of 25 km. By noon the group covered 15 km. Determine what percentage of the initial distance has the group of tourists to cover in the afternoon. *Solution:* *Answer:* _____ .	L 0 1 2 3 4 5
5.	Calculate the value of the expression: $8^9 : 4^{13} - 2^0$. *Solution:* *Answer:* _____ .	L 0 1 2 3 4 5

6.	Determine the real solutions of the equation $3x^2 - 7x + 2 = 0$, which are greater than $\sqrt{2}$. *Solution:* *Answer:* _____ .	L 0 1 2 3 4
7.	In an isosceles triangle the base angle is 30°, and the altitude to the base is 1 cm. Determine the area of the triangle. *Solution:* *Answer:*_____ .	L 0 1 2 3 4 5

8.	A boat carries sacks of potatoes. All sacks have the same weight. The boat with 20 sacks on it weighs 1200 kg, and with 25 bags weighs 1425 kg. Determine the weight of the boat and the weight of a sack. *Solution:*	L 0 1 2 3 4 5
	Answer: _____ .	
9.	Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}, \ f(x) = -3x + 6$. Determine the real values of x, greater than 1, so that the corresponding values of the function f are positive. *Solution:*	L 0 1 2 3 4 5
	Answer: $x \in$ _____ .	
10.	Into an aquarium with the shape of a cube, 4 litters of water are poured. Determine the length of the edge of the cube, if it is known that the height of the water is equal to 10 cm. *Solution:*	L 0 1 2 3 4
	Answer: _____ .	

11.	Consider $E(x) = \dfrac{(2x+1)^2 - 4x(x+2) - x + 14}{9 - x^2}$. Simplify the fraction and determine the values of $x \in \mathbb{N} \setminus \{3\}$, so that the values of $E(x)$ are natural numbers. *Solution:* *Answer:*_____.	L 0 1 2 3 4 5 6
12.	Consider the function $f: \mathbb{R} \to \mathbb{R}$, $f(x) = x^2 + mx + m - 3, m \in \mathbb{R}$, for which $x = 1$ is a zero. Determine the ordinate of the point, where the graph of the function f intersects $Oy -$ axis. *Solution:* *Answer:*_____.	L 0 1 2 3 4