MINISTERUL EDUCAŢIEI
ŞI CERCETĂRII
AL REPUBLICII MOLDOVA

Agenţia Naţională pentru
Curriculum și Evaluare

Numele elevului:________________________________

Prenumele elevului:_____________________________

Patronimicul elevului:___________________________

Instituția de învățământ:_________________________

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Localitatea:____________________________________

Raionul / Municipiul:____________________________

MATEMATICA (ÎN LIMBA ENGLEZĂ)

EXAMEN NAȚIONAL DE ABSOLVIRE A GIMNAZIULUI
SESIUNEA DE BAZĂ

08 iunie 2023
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

$$x^m \cdot x^n = x^{m+n}$$

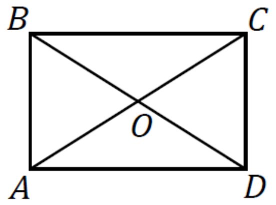
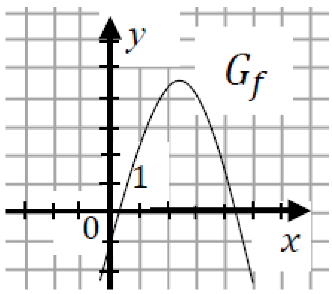
$$x^m : x^n = x^{m-n}$$

$$(x^m)^n = x^{mn}$$

$$(a-b)(a+b) = a^2 - b^2$$

$$\mathcal{V}_{parallelepiped} = abc$$

$$\mathcal{V}_{cylinder} = \pi R^2 H$$

Nr.	Items	Score
1.	Let $a = -1 - 4$ and $b = \frac{9}{5} : \frac{3}{10}$. Fill in the boxes with integer numbers, so that the statement becomes true. “$a = \boxed{}$, $b = \boxed{}$, $a \cdot b = \boxed{}$.”	L 0 1 2 3
2.	On the picture, O is the point of intersection of the diagonals of the rectangle $ABCD$. Write in the box the measure in degrees of the angle AOB, if it is known that $m(\angle CAD) = 40^{\circ}$. $m(\angle AOB) = \boxed{}$.  	L 0 3
3.	On the picture, the graph of the function $f: \mathbb{R} \to \mathbb{R}, \quad f(x) = ax^2 + bx + c, \quad a \neq 0,$ is represented. Write in the box one of the expressions „*positive*” or „*negative*”, so that the statement becomes true. „The maximum value of the function f is a $\boxed{}$ number.”  	L 0 3
4.	In the quality check process, in a lot of 320 pieces, 304 pieces were of good quality and the rest were defective. Determine what percentage of the total number of pieces were defective. *Solution:* *Answer:*____.	L 0 1 2 3 4
5.	Calculate the value of the expression $\frac{9^{-3} \cdot 27}{3^{-4}}$. *Solution:* *Answer:*____.	L 0 1 2 3 4

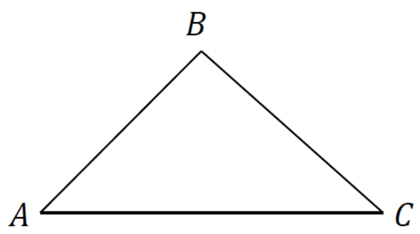
6. Determine the absolute value of the difference between the real solutions of the equation $x^2 - 3x - 4 = 0$.

Solution:

*Answer:*____.

L 0 1 2 3 4

7. In the isosceles triangle ABC, the base AC is 24 cm, and the height, corresponding to the base AC, is 5 cm. Determine the perimeter of the triangle ABC.



Solution:

*Answer:*____.

L 0 1 2 3 4 5

8.	In a multifunctional center, during a working day 2 operators processed a total number of 60 requests. Determine how many requests each operator processed if it is known that twice the number of requests processed by one operator is equal to three times the number of requests processed by the other operator. *Solution:* *Answer:*____.	L 0 1 2 3 4 5
9.	Consider the function $f: \mathbb{R} \to \mathbb{R},\ f(x) = x - 4$. Determine the real values of x, for which $f(3) \cdot f(x) < 3x$. *Solution:* *Answer:* $x \in$ ____.	L 0 1 2 3 4 5
10.	A piece of metal has the form of a rectangular parallelepiped with dimensions of 1 cm, 5 cm and 15 cm. Determine if the metal from the piece is sufficient to make a metallic bar in the form of a right circular cylinder with the radius of the base of 0,5 cm and the height of 1 m. *Solution:* *Answer:*____.	L 0 1 2 3 4

11.	Consider the expression $E(X) = 1 + \frac{X^2}{1-X^2} : \frac{X}{X+1}$. Determine the integer values of $X \in \mathbb{R} \setminus \{-1; 0; 1\}$, for which the corresponding value of $E(X)$ is an integer number. *Solution:* *Answer:*____.	L 0 1 2 3 4 5 6
12.	Consider the function $f: \mathbb{R} \to \mathbb{R},\ f(x) = mx + m^2,\ m \neq 0$. Determine the real values of m, such that the point $A(0; 1)$ lies on the graph of the function f and the zero of the function f is a positive number. *Solution:* *Answer:*____.	L 0 1 2 3 4