Numele: _____

Prenumele: _____

Patronimicul: _____

Instituția de învățământ:

_____

_____

Localitatea:

_____

Raionul / Municipiul:

_____

MINISTERUL EDUCAȚIEI
AL REPUBLICII MOLDOVA

Agenția Națională pentru
Curriculum și Evaluare

MATEMATICA (ÎN LIMBA ENGLEZĂ)

EXAMEN NAȚIONAL DE ABSOLVIRE A GIMNAZIULUI

SESIUNEA DE BAZĂ

08 iunie 2017
Timp alocat – 120 de minute

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

Instrucțiuni pentru candidat:

- Citește cu atenție fiecare item și efectuează operațiile solicitate.
- Lucrează independent.

Îți dorim mult succes!

Numele și prenumele evaluatorului: _____ Punctaj total:_____

Annex

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

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

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

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

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

$$(x^m)^n = x^{m \cdot n}$$

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

$$1 \text{ liter} = 1000 \text{ cm}^3$$

Nr.	Items	Score
1.	Fill in the box so that the statement becomes true. "If $a = -7 - 2$ and $b = \dfrac{6}{5} \cdot \dfrac{15}{2}$, then the value of the ratio $\dfrac{a}{b}$ is the number $\boxed{}$."	L 0 3
2.	On the picture, the right triangle ABC is represented, where $m(\angle ABC) = 90°$, $m(\angle BAC) = 35°$ and BK is an altitude. Write in the box the measure in degrees of the angle KBC. $m(\angle KBC) = \boxed{}$.	L 0 3
3.	On the picture, the graph of the function $\quad f: \mathbb{R} \to \mathbb{R}, \qquad f(x) = ax^2 + bx + c, \qquad a \neq 0,$ is represented. Using the picture, fill in the box with one of the following expressions "*strictly increasing*" or "*strictly decreasing*", so that the statement becomes true. "On the interval $[1; +\infty)$ the function f is $\boxed{}$."	L 0 3
4.	Petru did his homework in 3 hours and 20 minutes. For subjects of real profile he spent 60% of this time. Determine how many minutes did Petru spend to do the homework for the subjects of real profile. *Solution:* *Answer:*_____.	L 0 1 2 3 4

5.	Calculate: $\dfrac{2^3 \cdot 4^{-2}}{8^{-1}}$. *Solution:* *Answer:*_____.	L 0 1 2 3 4
6.	Let A be the set of real solutions of the equation $3x^2 + 7x - 6 = 0$. Determine the set $A \cap \left[-1; \dfrac{7}{10}\right]$. *Solution:* *Answer:*_____.	L 0 1 2 3 4
7.	Consider the isosceles trapezoid $ABCD$, where $AD \parallel BC$, $m(\angle A) = 45°$, $BC = 4$ cm. Determine the perimeter of the trapezoid $ABCD$, if it is known that its height is 2 cm. *Solution:* *Answer:*_____.	L 0 1 2 3 4 5

8.	Tudor filled with water a barrel with the volume of 145 liters. First he carried water with a pail with the volume of 7 liters, then with a pail with the volume of 5 liters. Overall he carried 25 pails. Determine how many pails of each type did Tudor carry. *Solution:* *Answer:*_____.	L 0 1 2 3 4 5
9.	Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = -4x + 3$. Determine all real values of x, for which the value of the function f is not greater than -2. *Solution:* *Answer:* $x \in$ _____.	L 0 1 2 3 4 5
10.	Ion and two of his friends decided to drink a glass of juice per each. Determine, if a liter of juice is enough to fill three glasses with the form of a right circular cylinder with the radius of the base of 3 cm and the height of 10 cm. *Solution:* *Answer:*_____.	L 0 1 2 3 4

11.	Solve in the set $\mathbb{R}$ the equation $$\frac{x^2 - 2}{x^2 + x} - \frac{1}{x + 1} = \frac{2x - 3}{x}.$$ *Solution:*	L 0 1 2 3 4 5 6
	*Answer:*_____.	
12.	Consider the function $f: \mathbb{R} \to \mathbb{R}$, $f(x) = (m^2 - 2)\, x + m$. Determine all real values of m, for which the graph of the function f passes through the point $A(1; 4)$ and intersects the $y-$ axis in a point with a negative ordinate. *Solution:*	L 0 1 2 3 4
	*Answer:*_____.	