MINISTERUL EDUCAȚIEI AL REPUBLICII MOLDOVA



Agenția de Asigurare a Calității

Numele: Prenumele: Patronimicul: Instituția de învățămînt: Localitatea: **Raionul / Municipiul:**

MATEMATICA (ÎN LIMBA ENGLEZĂ)

EXAMEN DE ABSOLVIRE A GIMNAZIULUI

08 iunie 2015 Timp alocat -120 de minute

Rechizite și materiale permise: pix cu cerneală de culoare 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

$$(a - b)(a + b) = a^{2} - b^{2}$$
$$V_{rectang.par.} = a \cdot b \cdot c$$
$$V_{cyl.} = \pi R^{2} H$$
$$\mathcal{A}_{right \ tr.} = \frac{1}{2}a \cdot b$$

Nr.	Items	Score
1.	Fill in the box so that the statement becomes true. "If $a = 9 - 12$ and $b = \frac{4}{3} : \frac{6}{9}$, then the value of the product $a \cdot b$ is the number"	L 0 3
2.	On the picture, the triangle <i>ABC</i> is represented. Using the picture, determine and write in the box the value of <i>x</i> . $x = \boxed{\qquad}.$	L 0 3
3.	On the picture, the graph of the function $f: \mathbb{R} \to \mathbb{R}$, $f(x) = ax^2 + bx + c$, $a \neq 0$, is represented. Using the picture, fill in the box with one of the symbols "<" or ">", so that the statement becomes true. a = 0. 0 = 1	L 0 3
4.	The annual profit of a company is 40000 lei. Determine the amount used for advertising, if it constitutes 5% of the annual profit of the company. Solution: Solution:	L 0 1 2 3 4

5.	Calculate: $\frac{2^{23}}{4^{3} \cdot 8^{5}}$. Solution: Answer:	L 0 1 2 3 4
6.	Let <i>A</i> be the set of real solutions of the equation $5x^2 - 9x - 2 = 0$. Determine the set $A \cap [-\sqrt{2}; 1]$. <i>Solution:</i>	L 0 1 2 3 4
7.	Let <i>ABC</i> be a right triangle, where the hypotenuse <i>AB</i> has the length equal to 8 cm and it forms with the cathetus <i>BC</i> a 30° angle. Determine the area of the triangle <i>ABC</i> . <i>Solution:</i>	L 0 1 2 3 4 5

8.	The sum of two numbers is equal to 55, and their ratio is equal to $\frac{2}{9}$. Determine the numbers. <i>Solution:</i>	L 0 1 2 3 4 5
9.	Consider the function $f: \mathbb{R} \to \mathbb{R}$, $f(x) = -2x + 3$. Determine the real values of x , for which the function f takes non-negative values. Solution:	L 0 1 2 3 4 5
	Answer: $x \in $	
10.	At a petrol station the diesel fuel is stored in a tank shaped as a cube with the edge of 3 m. To the petrol station the diesel fuel is transported in cisterns shaped as a right circular cylinder with base radius of 1 m and height of 3 m. Determine if the diesel fuel from three full cisterns will fit in the empty tank. <i>Solution:</i>	L 0 1 2 3 4
	Answer:	

11.	Find all real values of <i>x</i> , for which the sum of algebraic fractions $\frac{2}{x-3}$ and $\frac{2x}{x+3}$ is equal to the product of these fractions. <i>Solution:</i>	L 0 1 2 3 4 5 6
12.	Consider the function $f: \mathbb{R} \to \mathbb{R}$, $f(x) = ax + a^2 - 2$. Determine all real values of a , such that $x = 1$ is zero of the function f and the function f is strictly increasing on \mathbb{R} . Solution:	L 0 1 2 3 4