

**MINISTERUL EDUCAȚIEI  
ȘI CERCETĂRII  
AL REPUBLICII MOLDOVA**

**AGENȚIA NAȚIONALĂ  
PENTRU CURRICULUM ȘI  
EVALUARE**

Raionul

Localitatea

Instituția de învățământ

Numele, prenumele elevului

**MATEMATICA (ÎN LIMBA ENGLEZĂ)**

**PRETESTARE  
CICLUL GIMNAZIAL**

27 februarie 2025  
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!***

Punctaj acumulat \_\_\_\_\_

### Annex

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

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

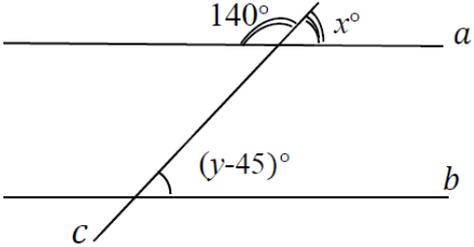
$$(x^m)^n = x^{m \cdot n}$$

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

$$V_{pyr.} = \frac{1}{3} \mathcal{A}_b \cdot h$$

$$1 \text{ m}^3 = 1000 \text{ l}$$

$$V_{par.} \left( -\frac{b}{2a}; -\frac{\Delta}{4a} \right)$$

Nr.	Items	Score
1.	<p>Let <math>a = (\sqrt{2})^2</math> and <math>b = 3 - 5</math>. Fill in the boxes with integers, which represent the values of the expressions:</p> <p style="text-align: center;">“<math>a = \boxed{\phantom{000}}</math> , <math>b = \boxed{\phantom{000}}</math> , <math>\frac{b}{a} = \boxed{\phantom{000}}</math> .”</p>	L 0 1 2 3
2.	<p>On the picture, the straight lines <math>a</math> and <math>b</math> are parallel, and <math>c</math> is a secant line. Using the data from the picture, write in the boxes the values of <math>x</math> and <math>y</math>.</p> <p>a) <math>x = \boxed{\phantom{000}}</math> .</p> <p>b) <math>y = \boxed{\phantom{000}}</math> .</p>	 L 0 1 2
3.	<p>Consider the function <math>f: \mathbb{R} \rightarrow \mathbb{R}</math>, <math>f(x) = -3x + 6</math>. Write in the box the zero of the function <math>f</math>.</p> <p style="text-align: center;"><math>x = \boxed{\phantom{000}}</math> .</p>	L 0 2
4.	<p>In 2024 the Republic of Moldova exported a total of 120 thousand tons of plums, grapes and apples, of which 60% were plums, 25% were grapes, and the rest were apples. Determine how many tons of apples were exported.</p> <p><i>Solution:</i></p> <p style="text-align: center;"><i>Answer:</i> _____.</p>	L 0 1 2 3 4 5





11.	<p>Consider the expression <math>E(X) = \left(\frac{1}{x-1} - \frac{1}{x+1}\right)(2X^4 - 2X^2)</math>. Show that for every <math>X \in \mathbb{N} \setminus \{1\}</math>, the corresponding value of <math>E(X)</math> is a perfect square.</p> <p><i>Solution:</i></p>	L 0 1 2 3 4 5 6
12.	<p>Consider the function <math>f: \mathbb{R} \rightarrow \mathbb{R}</math>, <math>f(x) = mx^2 + 2x + 1</math>, <math>m \neq 0</math>. The vertex of the parabola, representing the graph of the function <math>f</math>, lies on the <math>x</math> - axis. Determine the coordinates of the vertex of the parabola.</p> <p><i>Solution:</i></p>	L 0 1 2 3 4
<p><i>Answer:</i> _____.</p>		