6 noiembrie 2026

CLASA a IV-a

Here are some suggestions to help you do your best:

- Read carefully each question and think about the answer before choosing your response.

RULES

- Part I has four multiple choice exercises.
- Part II must be solved into English.
- Part III must be translated into English, and then solved in English as well.

PART I.

1.Teo writes the numbers 2,0,2,6 in the boxes $\square + \square - \square + \square$.
In which order can he write the numbers so that the calculation produces the biggest result?

A. 0,2,2,6 **B.** 0,6,2,2 **C**. 2,6,2,0 **D**. 6,0,2,2 **E**. 2,2,0,6

2.The sum of four consecutive natural numbers is 2026. What is the sum of the digits of the largest of these numbers ?

A.10 B.11 C.12 D.13 E.14

3. Laura is preparing a snack for herself, her parents, and her brothers. She places two croissants on a plate for each parent and one croissant for each child. Knowing that she placed a total of 7 croissants, how many brothers does Laura have?

A. 5 B.4 C. 3 D. 2 E.1



4. Prince Charming travels from the palace to the forest as swift as thought and returns as fast as the wind, taking a total of 12 minutes. If he travelled as fast as the wind both ways, the round trip would take 20 minutes. How many minutes would the round trip take if he travelled as swift as thought both ways?

A.2 B.4 C.6 D.8 E.10



PART II.

During the first four days of this week, Livia practises mathematics to prepare for the *22METS Contest*. Each day, starting on Tuesday, she solves twice as many problems as she did the previous day. Over the four days, she solved 28 more problems than she did on Thursday. How many problems did Livia solve on Tuesday?



PART III.

Monica şi Rodica au primit fiecare câte o pungă cu bomboane. În fiecare pungă sunt 10 bomboane cu fructe şi 9 bomboane cu ciocolată.

Monica scoate în fiecare zi câte două bomboane, fără să se uite în pungă. Dacă bomboanele sunt de acelaşi fel, le mănâncă, iar dacă sunt diferite, le pune la loc.

Rodica scoate şi ea câte două bomboane. Dacă bomboanele sunt diferite le mănâncă, iar dacă sunt de acelaşi fel, le pune la loc. După un număr de zile, în punga fiecărei fetiţe rămâne o singură bomboană. Precizaţi ce fel de bomboană are fiecare fetiţă.

Gazeta matematică nr 9-2024



6th November 2026

CLASA a V-a

Here are some suggestions to help you do your best:

- Read carefully each question and think about the answer before choosing your response.

RULES

- Part I has four multiple choice exercises.
- Part II must be solved into English.
- Part III must be translated into English, and then solved in English as well.

PART I.



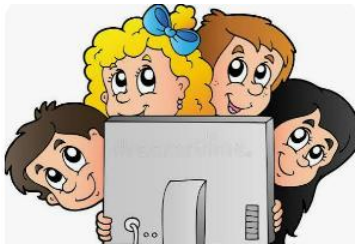
1. Divide 20 by all non-zero numbers less than 20. Calculate the sum of the quotients obtained.

A. 65 **B.** 64 **C.** 63 **D.** 55 **E.** 54



2. Amalia has three crayons: one red, one yellow and one blue. She has to colour two stuffed toys, a dog and a cat, using a different colour for each toy. How many different ways can she colour the two toys?

A. 3 **B.** 2 **C.** 4 **D.** 5 **E.** 6



3. A natural number is displayed on a computer screen. Every minute the number displayed is replaced by a number that is 18 greater than the product of its digits. What number will be displayed after 10 minutes if the initial number is 34?

A. 18 **B.** 26 **C.** 12 **D.** 30 **E.** 20

4. Ionel is building a wall using cubes. The bottom row consists of 380 cubes, the second row consists of 361 cubes and the third row consists of 342 cubes. If the 20^{th} row consists of 19 cubes, determine the total number of cubes used to build the wall.

A.3610 **B.** 3990 **C.**3310 **D.**3600 **E.** 3980

PART II.

A natural number is called Olympic if it is a four-digit number and, when divided by a three-digit number, leaves a remainder of 997. Find the sum of the smallest and the largest Olympic numbers.



PART III.

Ștefan cumpără o enciclopedie ilustrată pentru copii, al cărei număr de pagini este format din trei cifre. Cartea conține patru capitole și 300 de pagini, iar numerotarea paginilor începe de la 5. Se știe ca, pentru fiecare dintre capitolele 2, 3 și 4 suma cifrelor numerelor primelor sale două pagini este egală cu 18, iar între capitole nu există pagini goale. Cu ce pagină începe fiecare capitol?



G.M. 9/ 2026

6th November 2026

CLASA a VI-a

Here are some suggestions to help you do your best:

- Read carefully each question and think about the answer before choosing your response.

RULES

- Part I has four multiple choice exercises.
- Part II must be solved into English.
- Part III must be translated into English, and then solved in English as well.

PART I.

1. At a party of mathematicians, a round pizza is ordered. The host decides to cut the pizza into 12 slices, all meeting at the centre, but not into equal slices. She follows a simple rule: the measures of the slices, from the first to the last, increase progressively and are represented by consecutive odd numbers.



What is the measure, in degrees, of the 12th slice of pizza?

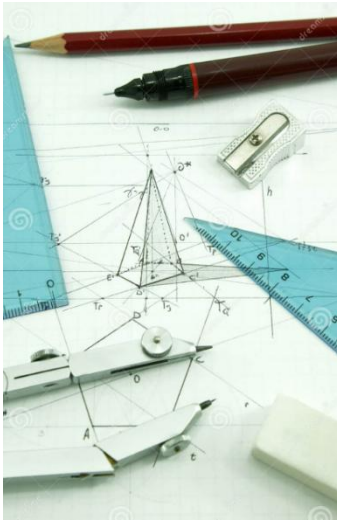
A. 43° **B.** 39° **C.** $41°$ **D.** 45° **E.** $47°$

2. The natural numbers are arranged in a sequence as shown in the adjacent figure. Determine the first number in the 33rd row of the sequence.

2
4 6
8 10 12
14 16 18 20

A. 1024 **B.** 1058 **C.** 1036 **D.** 1116 **E.** 1264

3. Let there be $A_1, A_2, A_3, A_4, A_5, A_6, A_7, A_8, A_9$ şi A_{10} distinct points, such that $A_1, A_2, A_3 \text{and} A_4$ points are collinear, while any other three points chosen are non-collinear. How many distinct lines are determined by the 10 points?



A. 41 **B.** 47 **C.** 40 **D.** 30 **E.** 44

4. In a class of 30 students, each student practises at least one of the three sports: football, basketball or athletics. 15 students play football, 13 play basketball, 12 practise athletics, 6 play football and basketball, 5 play football and athletics, and 4 play basketball and athletics. How many students in this class practise all three sports?



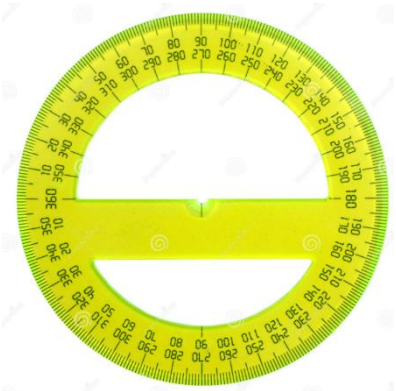
A. 3 **B.** 5 **C.** 2 **D.** 4 **E.** 6

PART II.

A configuration of angles formed around a point is given, where the measure of each angle, in degrees, is a prime number.

a. Does such a configuration exist containing 100 angles?

b. Determine the smallest natural number *n* for which there exists such a configuration containing *n* angles, no two of which are congruent.



G.M./ enunț modificat

PART III.

O mulţime cu patru elemente se numeşte *deosebită* dacă are următoarele proprietăţi:

(i) Elementele mulţimii sunt numere naturale;

(ii) Suma elementelor mulţimii este un număr impar;

(iii) Produsul elementelor mulţimii este un număr par.



Se notează cu a_n numărul submulţimilor *deosebite* ale mulţimii $A=\{1,2,3,...,n\}$.

(a) Determinaţi numerele a_8 şi a_9.

(b) Determinaţi cel mai mic număr natural *n* pentru care $a_n > 2023$.

G.M. 9/ 2026

6th November 2026

CLASA a VII-a

Here are some suggestions to help you do your best:

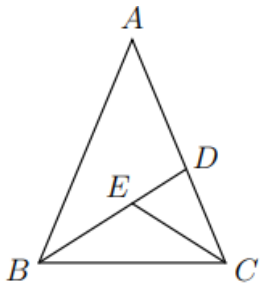
- Read carefully each question and think about the answer before choosing your response.

RULES

- Part I has four multiple choice exercises.
- Part II must be solved into English.
- Part III must be translated into English, and then solved in English as well.

PART I.

1.In an isosceles triangle *ABC*, with *AB=AC*, the triangle is divided into three smaller isosceles triangles, so that *AD=DB*, *CE=CD*, and *BE=EC*. The measure of angle *BAC* is equal to:



A. 24° **B.** 28° **C.** 30° **D.** 35° **E.** 36°

2.Consider the number $A=(a-2027)\sqrt{\left(1-\sqrt{2027}\right)^2}+\sqrt{\left(2-\sqrt{2027}\right)^2}$

If the numbers a and A are rational, then the value of the number a is equal to:

A. 0 **B.** 1 **C.** 2025
D. 2026 **E.** 2027





3. An arbitrary triangle has its longest side of 4 cm. What is the minimum number of points that must be chosen inside or on the sides of the triangle to guarantee that, no matter how they are chosen, there are always two points at a distance of at most 1 cm from each other?



A. 15 **B.** 17 **C.** 18 **D.** 19 **E.** 25

4. If $x=1-(1+2)+(1+2+3)-(1+2+3+4)+\ldots+(1+2+3+\ldots+2027)$, then the square root of the number x is equal to:

A.0 **B.** 1013 **C.**1014 **D.** 2027

E. 1028196



PART II.

Triangle ABC is an acute-angled isosceles triangle with base BC. The perpendicular to line AB at point A intersects line BC at point E, and the perpendicular to line AC at point A intersects line BC at point F. The perpendiculars from points E and F to line AC, and respectively AB, intersect at point P.

a) Prove that quadrilateral $ABPC$ is a rhombus.

b) If $AB\cap PF=\{M\}$, $AC\cap PE=\{N\}$, $AF\cap PB=\{T\}$ and $AE\cap PC=\{S\}$, prove that quadrilateral $MNST$ is a rectangle.

G.M

PART III.

O cutie conține doar jetoane verzi, roșii, albastre și galbene.

Printre oricare 27 de jetoane alese din cutie există întotdeauna cel puțin unul verde, printre oricare 25 de jetoane alese există întotdeauna cel puțin unul roșu, printre oricare 22 de jetoane alese există întotdeauna cel puțin unul albastru și printre oricare 17 jetoane alese există întotdeauna cel puțin unul galben.

Determină numărul cel mai mare de jetoane care s-ar putea afla în cutie, astfel încât să fie îndeplinite toate condițiile de mai sus.



6th November 2026

CLASA a VIII-a

Here are some suggestions to help you do your best:

- Read carefully each question and think about the answer before choosing your response.

RULES

- Part I has four multiple choice exercises.
- Part II must be solved into English.
- Part III must be translated into English, and then solved in English as well.

PART I.

1.There are 20 questions in a quiz. Each correct answer scores 7 points, each wrong answer loses 4 points, and each question left blank scores 0 points. Eric took the quiz and scored 100 points. How many questions did he leave blank?



A. 0 **B.**1 **C.**2 **D.**3 **E.** 4

2. A cube with an edge length of 4 units is constructed from small cubes with an edge length of 1 unit. What is the least number of small cubes that need to be taken out to increase the figure's surface area to 1,5 times its original area?



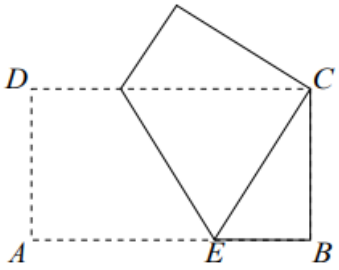
A. 6 **B.** 8 **C.** 10 **D.** 12 **E.** 32

3. A box contains only green, red, blue, and yellow tokens. There is always at least one green token amongst any 27 tokens chosen from the box, always at least one red token amongst any 25 tokens chosen, always at least one blue token amongst any 22 tokens chosen, and always at least one yellow token amongst any 17 tokens chosen. What is the largest number of tokens that could be in the box?



A. 27 **B.** 29 **C.** 51 **D.** 87 **E.** 91

4. The paper rectangle $ABCD$ is folded so that A is brought to C. The crease intersects the side AB at E. We know that the angle ECB is $30°$ and the area of triangle ECB is $15\,\text{cm}^2$. What is the area of the paper rectangle $ABCD$?



A. $90\,\text{cm}^2$ **B.** $45\,\text{cm}^2$ **C.** $30\sqrt{3}\,\text{cm}^2$ **D.** $25\sqrt{3}\,\text{cm}$ **E.** $45\sqrt{3}\,\text{cm}^2$

PART II.

Given that x is a non-zero integer satisfying the following equality holds:

$$2027 - x^{2026} = \frac{2026}{x^{2026}}.$$

Based on this, compute the numerical value of the expression $x^{2028} + \frac{1}{x^{2028}}$.

PART III.

Se consideră tetraedrul regulat $ABCD$, cu $AB = 12$ cm. Punctele M și N sunt mijloacele muchiilor CD, respectiv BC. Pe segmentele BM, respectiv AN se află punctele E și F, astfel încât $EM = 2BE$ și $\frac{AF}{AN} = \frac{1}{3}$. Determină sinusul unghiului dreptelor EF și AD.

