MINISTERUL EDUCAȚIEI AL REPUBLICII MOLDOVA

Agenția de Asigurare a Calității

Numele _____

Prenumele _____

Patronimicul _____

Instituția de învățământ

_____

_____

Localitatea

_____

Raionul

_____

MATEMATICA

PRETESTARE
EXAMEN DE ABSOLVIRE A GIMNAZIULUI

04 aprilie 2013
Timp pentru scriere – 120 de minute

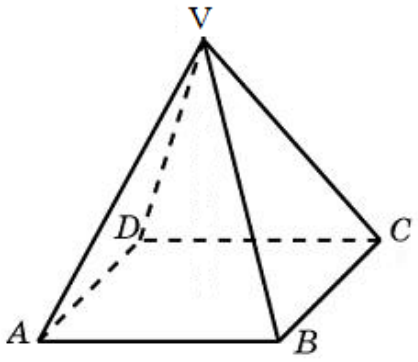
Rechizite şi materiale permise: *pix de culoare albastră, creion, riglă, radieră*.

Instrucțiuni pentru candidat:

- Citeşte cu atenție fiecare item şi efectuează operațiile solicitate.
- Lucrează independent.

Îți dorim mult succes!

Punctaj total: _____

№	Item	Score
	In items 2 - 4 fill in the designated area so that statements become true.	
1.	Arrange numbers in the ascending order $\sqrt{35}$; 6; $2\sqrt{8}$ in the following squares: ☐ ; ☐ ; ☐ .	L 0 1 3
2.	Function $f : R \to R, f(x) = -2x + 4$ is given. The slope of the line representing the graph of f equals ☐.	L 0 2
3.	The picture shows the pyramid VABCD. Fill in the blanks below appropriately so that the statement becomes true: In pyramid VABCD: point V is ☐ ; quadrangle ABCD is ☐ ; triangle VCB is ☐ ; intercept VC is ☐ . 	L 0 1 2 3 4
4.	A passenger traveled from Chişinău to Bucureşti by train. The train departed from Chişinău at 16:45 and arrived to Bucureşti at 06:30 the next day. The passenger traveled ☐ hours ☐ minutes. *Justify your answer:*	L 0 1 2 3 4

5.	A snail starts its way from some point of the circle and crawls around the circle in one direction. The snail covers distances equal to length of the following arches having the degrees 35º15′36″, 105º19′29″ and 39º24′55″ respectively. What is the total distance crawled by the snail, if the circle radius is equal 2 *m*? (Please, round your answer to integer). *Solution:* *Answer*: ≈ ☐ *m*.	L 0 1 2 3 4 5
6.	Find *card A*, where $A=N \cap D$, and *D* is the set of admissible values of expression $\sqrt{11-3x}$. *Solution:* *Answer*: *cardA* = ☐.	L 0 1 2 3 4 5 6

7. Polynomials $P(X)=3X^2-2X-5$ and $Q(X)=X+2$ are given.

a) Without performing polynomial division, find the residue of division of polynomial *P(X)* to polynomial *Q(X)*.

L 0 1 2 3

Solution:

Answer:_____.

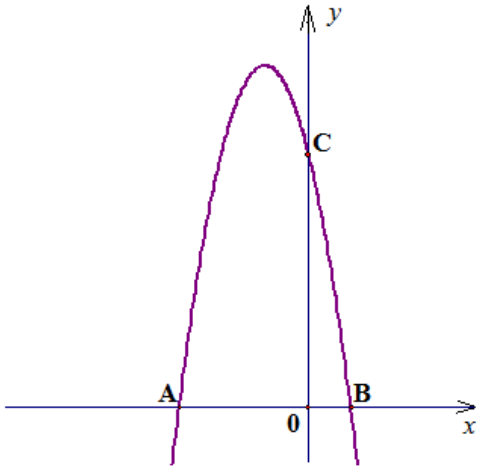
b) Solve in the set *R* the inequality $\frac{P(x)}{Q(x)-1}\leq 0,$ where *P(X)* and Q(X) are the given polynomials.

L 0 1 2 3 4 5 6 7

Solution:

Answer:_____.

8. The picture shows the graph of the function
$f: R \to R,\ f(x) = -2x^2 - 4x + 6.$



L 0 1 2

a) Fill in the empty frames so that the statement becomes true:
«The point C are the coordinates C(☐ ; ☐)».

b) Find the coordinates of points A and B.

L 0 1 2 3 4

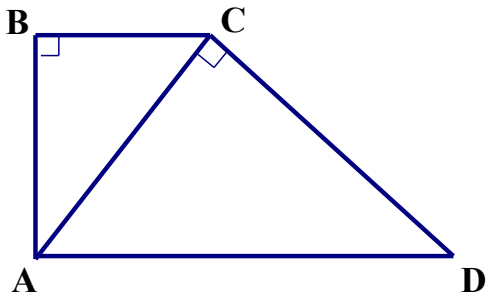
Solution:

Answer:_____.

c) Find real values of *m* and *n*, such that line AC is the graph of the function $g: R \to R,\ g(x) = mx + n$.

L 0 1 2 3 4 5

Solution:

	Answer: $m=$ ☐ ; $n=$ ☐ .	
9.	In the rectangular trapezoid ABCD with bases [AD] and [BC], $m(\angle ABC) = 90^{\circ}$, AB= 8 *cm*, [AC]⊥[CD], AC= 10 *cm*. Find the area of the trapezoid ABCD. *Solution:*  *Answer*:_____ .	L 0 1 2 3 4 5 6

Application

$$l_c = 2\pi r$$

$$A_{tr.} = \frac{a+b}{2} \cdot h$$

$$aX^2 + bX + c = a(X - x_1)(X - x_2),\ \ a \neq 0,\ \ x_1,\ \ x_2 - \ the\ roots\ of\ \ trinomial$$

$$h_c^2 = AD \cdot DB,\ \ theorem\ of\ the\ height\ in\ rectangular\ triangle$$