CYPRUS MATHEMATICAL SOCIETY

PANCYPRIAN COMPETITION

DECEMBER 2025

PRIMARY LEVEL 5

Date: 13/12/2025 *Time: 09:30-11:30*

INSTRUCTIONS

1. Solve all the problems, fully justifying your answers.
2. Each problem is worth 10 points.
3. Write with blue or black ink (shapes can be drawn with pencil).
4. The use of corrective liquid (Tipp-Ex) is not allowed.
5. The use of a calculator is not allowed.

PROBLEMS

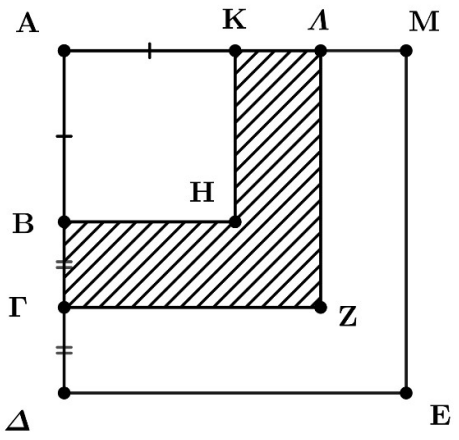
Problem 1

Given the equations $\alpha + \frac{1}{2}\beta = \frac{7}{2}$ and $\alpha + 2\beta + 3\gamma = 14$. Find:

i. The value of the expression $2\alpha + \beta$.
ii. The value of the expression $3\alpha + 3\beta + 3\gamma$.
iii. The value of the expression $\alpha + \beta + \gamma$.

Problem 2

Given the square ΑΜΕΔ. The area of the square ΑΚΗΒ is 144 cm². Points Β and Κ are the midpoints of sides ΑΔ and ΑΜ, respectively, and points Γ and Λ are the midpoints of sides ΒΔ and ΚΜ, respectively. Calculate the area and the perimeter of the shaded shape ΚΛΖΓΒΗΚ.



Problem 3

Find the sum of all three-digit numbers for which:

i. The sum of their digits is **7**.
ii. The tens digit is even, and the sum of their digits is **7**.
iii. The units digit is greater than the hundreds digit, and the sum of their digits is **7**.

Problem 4

In a classroom during the mathematics lesson, Eleni gives her classmates the following problem:

"The word STEAM represents a five-digit number.
Each of the letter's S, T, E, A, and M represents a different single-digit natural number. The following hold:

(1) The digit S is twice the digit E.
(2) The digit T is 1 less than the digit E.
(3) The digit A is equal to twice T, increased by 1.
(4) The digit M is equal to half the sum of the digits E, S, T, and A.

Find the five-digit numbers for which all the above conditions are satisfied."