



CYPRUS MATHEMATICAL SOCIETY

PANCYPRIAN COMPETITION

DECEMBER 2025

PRIMARY LEVEL 6

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 $\alpha + \beta + \gamma = 13\frac{3}{5}$ and $\alpha - \frac{1}{2}\beta = \frac{7}{2}$. Find:

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

Problem 2

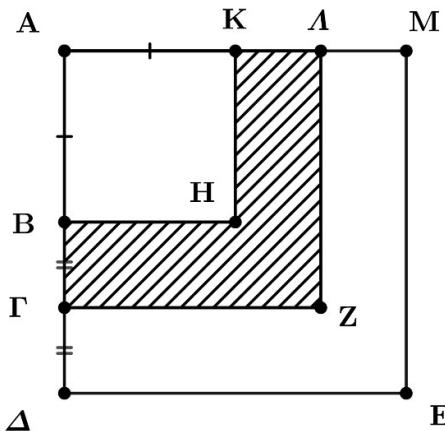
Given the figure $\text{AME}\Delta$.

The side $AK = (5\chi - 12)\text{cm}$. The area of the square AKHB is 169 cm^2 .

Points B and K are midpoints of sides $\text{A}\Delta$ and AM respectively, and points Γ and Λ are midpoints of sides $\text{B}\Delta$ and KM respectively.

Calculate:

- i. The value of χ .
- ii. The area of the shaded shape $\text{K}\Lambda\text{Z}\Gamma\text{B}\text{H}$.
- iii. The perimeter of the shape $\text{A}\text{M}\text{E}\Delta\text{Z}\Lambda$.



Problem 3

Find the smallest natural number which, when divided by 2 leaves a remainder of 1, when divided by 3 leaves a remainder of 2, and when divided by 5 leaves a remainder of 4.

If we write the subsequent numbers with this property, which one is the 20th number?

Problem 4

A bookstore sells four books Alpha, Beta, Gamma, and Delta on a special offer. If you buy three books, you get the cheapest one for free. Calculate the prices of the four books, given the following information:

If you buy 1 Alpha, 1 Beta, and 1 Gamma, you pay 18 euros.

If you buy 1 Delta, 1 Beta, and 1 Gamma, you pay 25 euros.

If you buy 1 Delta, 1 Alpha, and 1 Gamma, you pay 23 euros.

If you buy 1 Delta, 1 Alpha, and 1 Beta, you pay 25 euros.

Two of the books have the same price.