CYPRUS MATHEMATICAL SOCIETY
REGIONAL COMPETITION
NOVEMBER 2026

GYMNASIUM A'

Date: 07/11/2026 *Time: 10:00-12:00*

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

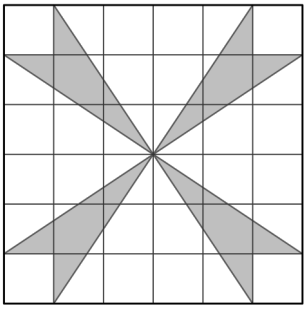
Problem 1

The sum of a two-digit number and a three-digit number is 604. Furthermore, if we divide the three-digit number by the two-digit number, we obtain a quotient of 9 and a remainder of 34.

Find the two-digit number.

Problem 2

The perimeter of the square shown in the adjacent figure is 72 cm and it is divided into smaller, equal-sized squares.



Calculate the area of the shaded part.

Problem 3

An electrical appliance store stocks two types of televisions: OLED and LED. On January 1st, the total number of televisions in the warehouse was 1200. Of these, 40% were OLED, and the remainder were LED. During January, the percentage of LED televisions sold was double the percentage of OLED televisions sold. Given that, after these sales, the number of remaining OLED televisions was exactly equal to the number of remaining LED televisions, calculate the percentage of total television sales (OLED and LED) for the store during that month.

Problem 4

The following numbers are given in the binary number system:

$$A = 111111111111111_2 \quad \text{and} \quad B = 11111111111111_2$$

Calculate the value of $\frac{A-B}{B+1}$ in the decimal number system.