



**CYPRUS MATHEMATICAL SOCIETY
NATIONAL COMPETITION
DECEMBER 2017**

PRIMARY – LEVEL 6

Date: 02/12/2017

Time: 09:30 -11:30

INSTRUCTIONS

1. Solve all the problems by giving full answers.
2. Each problem is marked with 10 points.
3. Write with blue or black ink (Shapes can be drawn with pencil).
4. The use of corrective liquid (Tip-Ex) is not allowed.
5. The use of a calculator is not allowed.

PROBLEMS

Problem 1

The shapes, \odot , \blacklozenge , \blacksquare , \blacktriangleleft represent four different single digit numbers from 1 to 9. Based on the following equations calculate the digit corresponding to the square \blacksquare .

$$\blacktriangleleft + \blacksquare = \blacklozenge$$

$$\blacktriangleleft + \blacktriangleleft = \odot + \odot + \odot + \odot + \odot$$

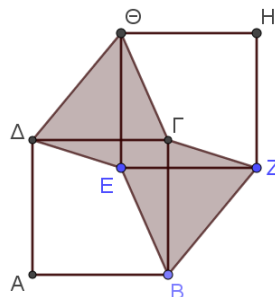
$$\blacktriangleleft + \blacktriangleleft = \blacklozenge + \odot$$

Problem 2

Aris had some money. On the way to his grandfather's house he stopped at a kiosk and spent €5. When he arrived at the house, his grandfather doubled the rest of his money. He then headed for his uncle's house but stopped at a pastry shop and spent €8. When he arrived at the house, his uncle doubled the rest of his money and his total amount of money became €5. How much money did he have initially?

Problem 3

In the figure below $AB\Gamma\Delta$ and ΘEZH are squares. The segments $\Delta\Gamma$ and EZ are parallel and equal to 6cm. Calculate the area of the shaded region $\Theta\Gamma ZBE\Delta$.



Problem 4

An employee used the percentage 80% in the zoom out tool of a photocopier machine, to get a copy of a document in 80% of the original size. Find the percentage that she will use in the magnification tool of a photocopier machine, to create another copy, which has the size as the original document?