

EXTRAORDINARY CALL

THEORETICAL PART: 4 points

APPLIED PART: 6 points

To pass the exam, you must obtain at least the 50% of the scoring corresponding to each one of the parts

THEORETICAL PART

- (1.5 points)** Describe two different approaches for the concept of fraction (including examples of both) and design a teaching situation to introduce one of them in a 4th grade course.
- (1 point)** Define: positional numeral system, least common multiple of two numbers, mixed recurring decimal number, prime number and complement of a set.
- (0.75 points)** Design an appropriate strategy to work the following problem in a Primary course:
"Find two numbers knowing that their sum is 90 and that their quotient is 4".
- (0.75 points)** A 4th grade student has solved the following division as it is shown below:

$$\begin{array}{r} 745 \quad | \quad 23 \\ 285 \quad 29 \\ \hline 78 \end{array}$$

Explain the possible mistake he has made and describe how you would try to correct it.

APPLIED PART

- (0.5 points)** Is $14/56$ equivalent to a decimal fraction? If yes indicate which is that fraction, and if not justify why.
 - (1 point)** John spends $3/5$ of the money he had and now he has 30 euros left. How much money did he have at the beginning? How much money did he spend?
 - (0.5 points)** How many bottles of $3/4$ of liter can be filled with a container of 30 liters?
- (1 point)** In a shop the employees have bought 120 kg of apples at 1.50€/kg and another 80kg at 1.75€/kg. After that, they sold each kg of apples at 2.72€/kg. What was the profit they have obtained? What would have been this profit if they had sold each one of the kilograms 8 cents more expensive than the initial price?
- (0.5 points)** Euclides was born in the year 325 B. C. and he lived for 60 years, whereas Hypatia of Alexandria was born in the year 370 A. C. and she lived for 15 years less than Euclides. Find the quantity of years amongst their deaths.
- (1 point)** In a 3th grade course there are 30 students. We know that a 60% live in Oviedo and a 70% goes to school by feet. In addition, the 20% does not live in Oviedo and employs a means of transport to go to school. How many students live in Oviedo but use a means of transport to go to school? How many students do neither live in Oviedo nor go by feet to school?
- (1 point)** We would like to enclose a trapezoidal piece of land of sides 320, 104, 396 and 84 meters, respectively, by using trees so that the distance between the trees is always the same and there is a tree in each one of the four corners. What is the maximum distance at which the trees can be placed and how many trees are required?
 - (0.5 points)** What is the lowest natural number satisfying that if we divide it separately by 15, 20 and 36 we always obtain a remainder equal to 9?

**ARGUE YOUR ANSWER IN ALL THE QUESTIONS. THE USE OF THE CALCULATOR IS NOT ALLOWED.
 DELIVER ALSO THE CALCULATION SHEETS**