

Paraguay Mathematical Olympiad 2014

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by Mualpha7

- 1 Consider a square of side length 12 centimeters. Irina draws another square that has 8 centimeters more of perimeter than the original square. What is the area of the square drawn by Irina?

- 2 Clau writes all four-digit natural numbers where 3 and 7 are always together. How many digits does she write in total?

- 3 Juan chooses a five-digit positive integer. Maria erases the ones digit and gets a four-digit number. The sum of this four-digit number and the original five-digit number is 52,713. What can the sum of the five digits of the original number be?

- 4 Nair and Yuli play the following game: 1. There is a coin to be moved along a horizontal array with 203 cells. 2. At the beginning, the coin is at the first cell, counting from left to right. 3. Nair plays first. 4. Each of the players, in their turns, can move the coin 1, 2, or 3 cells to the right. 5. The winner is the one who reaches the last cell first. What strategy does Nair need to use in order to always win the game?

- 5 Let ABC be a triangle with area 92 square centimeters. Calculate the area of another triangle whose sides have the same lengths as the medians of triangle ABC .
