

Paraguay Mathematical Olympiad 2003

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1 How many numbers greater than 1.000 but less than 10.000 have as a product of their digits 256?

2 With three different digits, all greater than 0, six different three-digit numbers are formed. If we add these six numbers together the result is 4.218. The sum of the three largest numbers minus the sum of the three smallest numbers equals 792. Find the three digits.

3 Today the age of Pedro is written and then the age of Luisa, obtaining a number of four digits that is a perfect square. If the same is done in 33 years from now, there would be a perfect square of four digits. Find the current ages of Pedro and Luisa.

4 Triangle ABC is divided into six smaller triangles by lines that pass through the vertices and through a common point inside of the triangle. The areas of four of these triangles are indicated. Calculate the area of triangle ABC .

<https://cdn.artofproblemsolving.com/attachments/9/2/2013de890e438f5bf88af446692b495917b1f.png>

5 In a square $ABCD$, E is the midpoint of side BC . Line AE intersects line DC at F and diagonal BD at G . If the area $(EFC) = 8$, determine the area (GBE) .
