



## Paraguay Mathematical Olympiad 2001

[www.artofproblemsolving.com/community/c2469015](http://www.artofproblemsolving.com/community/c2469015)

by parmenides51

- 1 In a warehouse there are many empty cans of 4 colors: red, green, Blue and yellow. Some boys play to build towers in which no two cans of the same color, with a can in each floor and at any height. How many different towers can be built?

---

- 2 Find the four smallest four-digit numbers that meet the following condition: by dividing by 2, 3, 4, 5 or 6 the remainder is 1.

---

- 3 Find a 10-digit number, in which no digit is zero, that is divisible by the sum of their digits.

---

- 4 In a parallelogram  $ABCD$  of surface area  $60 \text{ cm}^2$ , a line is drawn by  $D$  that intersects  $BC$  at  $P$  and the extension of  $AB$  at  $Q$ . If the area of the quadrilateral  $ABPD$  is  $46 \text{ cm}^2$ , find the area of triangle  $CPQ$ .

---


