NOTE: The solution to the problems should start in this page.

1.– Prove that, if $n \ge 4$, then $2^n < n!$

2.— Consider a circumference of radius r. From a certain point P, two objects start moving at the same time at a constant speed v. The first one follows the circumference again and again clockwise. The second one follows repeatedly forth and back the diameter that passes through P. Can the two objects meet?

3.– Solve the inequation: 0 < |x - 1| - |x| < 1.