Problem 3 (due Monday, March 11)

Let $p(x)=cx^n+c_1x^{n-1}+\ldots$ be a polynomial of degree n with real coefficients and the leading coefficient $c\neq 0$. Prove that at least one of the numbers $|p(0)|, |p(1)|, \ldots, |p(n)|$ is greater or equal than $\displaystyle \frac{|c|n!}{2^n}$. Prove furthermore that this bound is best possible.

We received a solution form Mithun Padinhare Veettil. For a complete solution see the following link Solution.