

Bilkent University
Department of Mathematics

## Problem Of The Month

Term: December 2021

Find all primes $p$ for which there exist an odd integer $n$ and a polynomial $Q(x)$ with integer coefficients such that the polynomial

$$
1+p n^{2}+\prod_{i=1}^{2 p-2} Q\left(x^{i}\right)
$$

has at least one integer root.

