



Bilkent University
Department of Mathematics

PROBLEM OF THE MONTH

Term: March 2014

Let $d(n)$ be the smallest prime divisor of integer $n \notin \{0, -1, +1\}$. Determine all polynomials $P(x)$ with integer coefficients satisfying

$$P(n + d(n)) = n + d(P(n))$$

for all integers $n > 2014$ for which $P(n) \notin \{0, -1, +1\}$.