



Bilkent University
Department of Mathematics

PROBLEM OF THE MONTH

Term: June 2019

Let $P(x)$ be a non-constant polynomial with real coefficients such that all of its roots are real numbers. Suppose that there exists a polynomial $Q(x)$ with real coefficients such that

$$(P(x))^2 = P(Q(x))$$

for all real numbers x . Determine the maximal possible number of distinct roots of $P(x)$.